Approved for Use With *TRAVELLER*® and 2300™

the TRAVELLERS' Digest

Number 10

U.S. $3.95

For Traveller

Anagathics
The Drug of the Ages

Reference Point
A Classic Traveller Adventure

The Plague of Perruques
A MegaTraveller Adventure by Marc Miller

Survey Statistics on the Third Imperium

For 2300

Pentapod "Equipment"

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The "Squid" Submersible

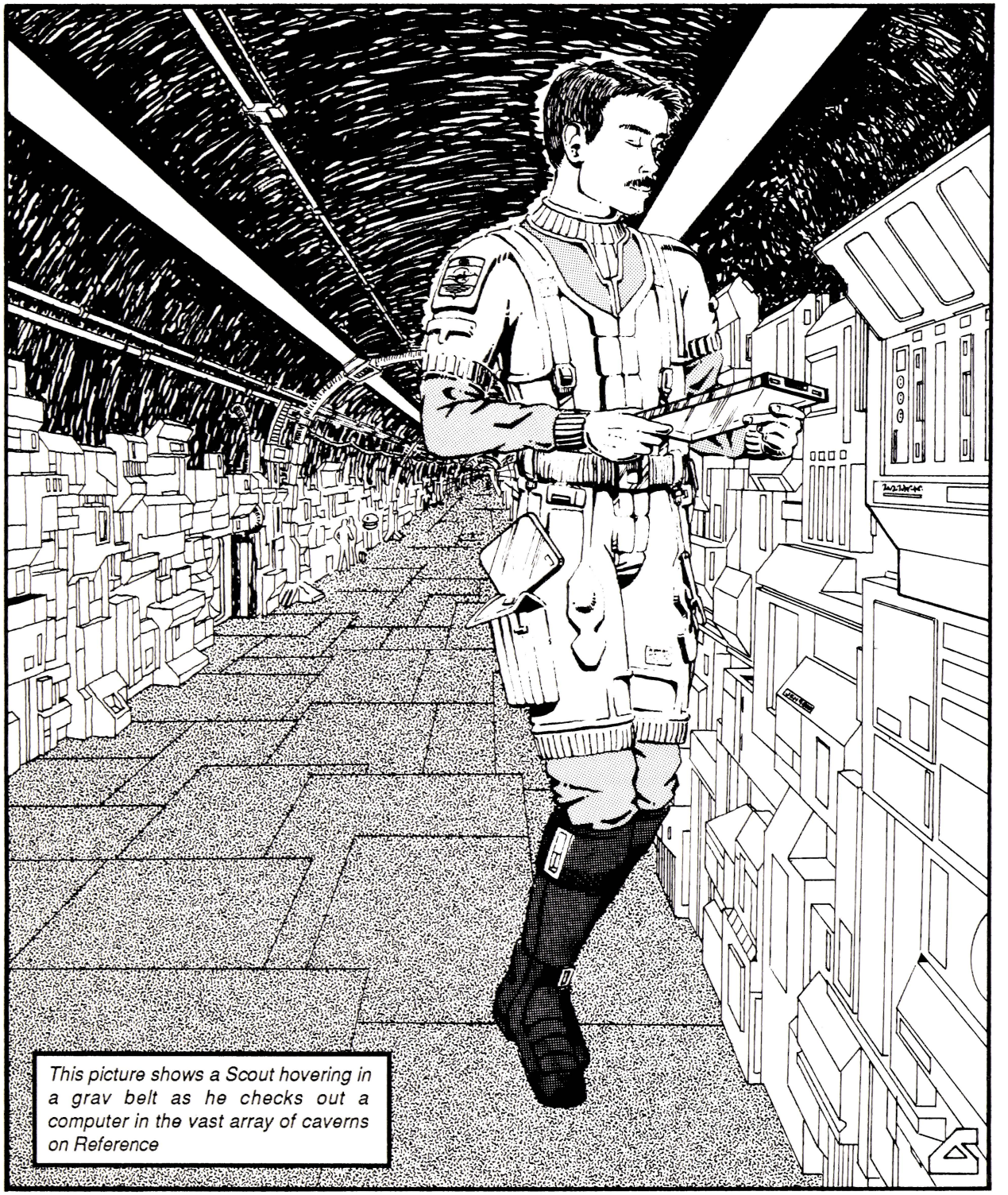
Medical Kit

For Both Traveller and 2300

Referee Tips for Better Roleplaying

The quarterly adventure magazine devoted to GDW's science-fiction role playing games

Reference Point
FEATURE ADVENTURE



This picture shows a Scout hovering in a grav belt as he checks out a computer in the vast array of caverns on Reference

"Computers are wonderful tools supplementing the brain's power to produce miraculous answers to difficult questions. But there are times, as every scientist knows, when the only way to learn a new fact is to engage in what is called 'basic research': simply stated, to do what no one has ever done, to go where no one has ever gone."
—Akidda Laagiir, from "The Empty Center" in the *Travellers' Digest*, 1106

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Suggestions by Joe D. Fugate Sr.

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EDITORS' DIGEST

Are you ready for another round of gushing enthusiasm for this issue's contents and our latest activities? Here we go...

Seriously, a lot of things have been happening lately around our offices. With the new full-size format that we debuted last issue, *Travellers' Digest* is now able to really pack in useful information for aficionados of **Traveller** and **2300**. This issue is no exception.

Leading off this issue is "Reference Point", our feature adventure. Now that our four characters have made it to Capital, how can they get home again? We solve this problem neatly by sending them *farther*, toward Terra, humaniti's homeworld. They won't get there until next July, but meanwhile, we have plenty of interesting stops to visit along the way.

Filling out the adventure, of course, are library data and subsector maps for the region of space the four knights are currently travelling through. As an added bonus, we also give you a map of Capital that we couldn't squeeze into the last issue.

From Marc W. Miller comes "Plague of Perruques", the other adventure scenario in this issue. It pits your players against a particularly nasty epidemic in the Spinward Marches. Can they find the answer in time to save a world's population?

Besides these two adventures, our regular columns are bursting with new information. "Gaming Digest" tells referees and players how to get more out of roleplaying games. "Playing the Characters" finally profiles Akidda Laagiir, the last of the four characters to be featured. "Tech Briefs" complements this writeup with a full description of the typical journalist's holorecorder and its capabilities. (We want one, we want one!) "Q & A" again gives the straight, *official* answers to all your questions on **Traveller** and **2300**.

And an all-new column, "Medical Digest", debuts in this issue with an explanation of anagathics in **Traveller**. Look for this column again in the future—we have some fascinating articles lined up for it.

Finally, our **2300** section is bristling with new equipment, both foreign and domestic. (Some of this pentapod equipment sounds useful enough, but we're not sure it's quite what we had in mind. You'll have to decide for yourself if you want your characters to use it.)

We spent the first week of July in Baltimore for the ORIGINS 87 game convention, and had a wonderful time. Not only did we get a chance to touch bases with lots of happy fans, we also met some new contributors with some exciting ideas for future articles. You'll start seeing some of these as early as next issue.

While in Baltimore, we offered several seminars for conventioneers. One of these, a **"Traveller** Potpourri", again featured our editor reading Vargr proverbs to a wide-eyed (and wide-eared) audience. Another seminar, titled "How to Write and Sell Game Adventures and Articles", taught newcomers some tips for breaking into this market. If you didn't have a chance to come to Baltimore and attend these seminars for yourself, we might be able to help you out.

We have handouts available for both seminars, and we'll be happy to send either or both of them to you, *free*, if you'll send us a self-addressed stamped envelope. Put one stamp on the envelope for one, or two stamps for both, (use business sized envelopes) and be sure to specify whether you want the "Vargr Language" or "Writing" handouts, or both.

We also have new contributor's guidelines for writers and artists. If you're interested in having your material seen by thousands of gamers around the world, send us a self-addressed stamped envelope for these guidelines. Again, specify whether you're interested in the writer's or artist's guidelines in your request.

(If you're not a writer or artist, but there are certain things you want to see in *Travellers' Digest*, feel free to drop us a line telling us about it. We pay very close attention to reader feedback.)

Mistakes Department: In the rush to get out our first "big" magazine a few months ago, we made a few goofs that need to be corrected. "Noblesse Oblige" was co-authored by Mike Swarm, a name we inadvertently omitted. On the excellent writeup we had on the Imperial Palace, Bill Connors should have had top billing over co-author (and illustrator) Rob Caswell. We also left off the names of the playtesters for Adventure 9: Craig Sweigart, Nona Sweigart, Tom Anderson, Bob Coonrod, and Bill Hezeltine. Sorry about these omissions.

While we're at it, we also want to thank the valiant souls who helped us through this issue's fun and excitement: Craig Sweigart, Duane Christiansen, Brian Carlson, and Denise Janicek. The adventures in our magazine are much improved by the reactions of these playtesters, and we want to express our appreciation.

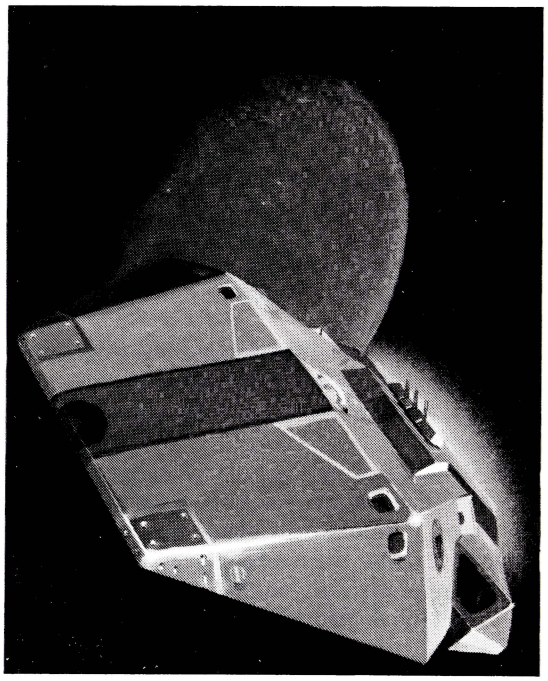
It's been a real job for our production staff to squeeze everything into this issue, so we'll leave a little (very little) blank space on this page for those of you who want to jot down any notes. We hope you enjoy reading the rest of this issue as much as we've enjoyed producing it.

P.S. As long as we have your attention, we might mention that copies of our last issue (Number 9), with details of Emperor Strephon's assassination, are going *fast*. If you don't have one yet, hurry to your local game store or write our back issues department while you still can.

P.P.S. As of this issue, we are no longer printing the Universal Task Profile (UTP) pages in the magazine. Where can you get them, then? If you have earlier issues of our magazine (or *Grand Survey* or *Grand Census*), you have a copy. When **MegaTraveller** is available, it will of course contain complete UTP rules. If all else fails, send us a self-addressed stamped envelope, and we'll get a copy of the UTP rules out to you by return mail.

(The bonus to you is that you have two extra pages of gaming material in this and future issues of *Travellers' Digest*. Enjoy!)¤

REFERENCE POINT



Reference Point deals with four knights who have travelled to the Imperial capital. This issue marks the tenth episode in the continuing journey of four travellers on their voyage to the Imperial Capital. Now that they have reached the capital, they must take stock of their resources and determine how they are going to get back home.

It is assumed that this adventure will be administered by a referee who has read through it, and who is familiar with both this adventure and the rules for **Traveller**. The basic **Traveller** rules are all that is required. Paper, pencils, six-sided dice, and square-grid graph paper are needed, and a calculator is helpful.

Optional References: Additional helpful information may be found in:

- Book 8, *Robots*
- Supplement 8, *Library Data (A-M)*
- Supplement 11, *Library Data (N-Z)*
- *The Atlas of the Imperium*

The only background information required for this adventure is contained in this issue of the *Travellers' Digest.*

Chapters: This adventure is in several chapters, most of which are material to be read only by the referee.

This introduction may be read by both the players and the referee.

The chapter "Onward and Upward" introduces the characters and the situation. This section is designed to be read to the players in order to acquaint them with the characters and their personalities.

The rest of the adventure is for the referee only; players may discover its secrets only by playing the adventure.

STANDARDS AND ASSUMPTIONS

This adventure takes place in the universe published and described by a multitude of **Traveller** products.

The Imperium is a huge human-dominated stellar empire thirty centuries in the future. It encompasses several hundred light-years of our segment of the Milky Way galaxy.

The Core Sector is a 32 by 40 parsec (1 parsec = 3.26 light-years) area at the center of the Imperium. A sector is divided into sixteen administrative areas called subsectors. Each subsector is 8 by 10 parsecs in size.

A world is commonly listed with its name followed by a slash and the name of its subsector location. For example, Capital/Core refers to the world *Capital* in the *Core* subsector.

Dates: All dates herein correspond to the Imperial calendar. The starting date of this adventure is 312-1104.

Place: This adventure starts on the world Capital, the central seat of the Imperial government and the home of the emperor. The Imperium is a vast and powerful interstellar empire over 1000 years old, and encompassing more than 11,000 worlds.

CHARACTERS

This adventure is intended for the characters listed. Feel free to change any or all of the genders as desired. Additional background information for these characters can be found in other issues of the *Travellers' Digest.*

AKIDDA LAAGIIR

Journalist 858AAB Age 44 6 terms Cr28,000
Interview-5, Streetwise-3, Grav Vehicle-1, Wheeled Vehicle-1, Admin-1, Brawling-1

Born: 319-1059 on Mora/Mora
Position: Current recipient of the *Travellers' Digest* Touring Award.

Akidda Laagiir started at the age of eighteen as a copy boy with the *Mora World Review*; his friendly face and his ability to get people to trust him contributed to his steady career progress. Living on Mora, with its charismatic dictator, the Duchess Delphine the Matriarch, is sometimes a trying experience for any journalist, which may explain his occasionally iconoclastic actions. He is slightly prejudiced against "the system", preferring fresh ideas and fresh ways of doing things.

Akidda's most prominent skill is his interviewing ability. By his knowledge of psychology, body language, and oral communication, he has a good chance of discerning someone's feelings and drawing him out.

His admin skill was learned while moving up the ranks, but it is a skill that he would just as soon not need: he much prefers cutting through to the heart of a situation. While he is sensitive to the needs of others, he has a well developed self-preservation instinct that allows him to quickly adapt to strange locales and cultures—a skill that has saved his neck many times.

DUR TELEMON
Ex-Scout B7A85B Age 36 3 terms Cr8,000
Auto Pistol-3,Survival-2, Pilot-1, Grav Vehicle-1, Engineer-1, Gambling-1, Brawling-1

Born: 038-1068 on Mora/Mora

Dur Telemon was *born* into the Scout service. His father was in the Scout service while Dur was growing up, and both of his grandfathers served in the Scouts in their younger days. Dur enjoyed nothing more as a boy than to sit and listen to their tales of adventure. The Fourth Frontier War broke out when Dur was a teenager—his father's service in the war was a source of pride for the entire family.

Dur's individualistic nature meshed well with his duties in the Exploration Office of the Scout Service. In his first term, a "routine" mapping expedition on Pannet/Rhylanor suddenly turned into a hostage rescue operation, and it was then that Dur happened to save Dr. Krenstein's life.

The harsh conditions Dur often encountered taught him how to staying and live off the land in exotic environments.

Dur has resigned from the Scouts and is travelling with his uncle, Akidda Laagiir.

DR. THEODOR KRENSTEIN
Scientist 495FCB Age 61 10 terms Cr180,000
Robotics-5, Leader-3, JOT-2, Rifleman-1, Grav Vehicle-1, Electronics-1, Mechanical-1, Medical-1

Born: 173-1043 on Rhylanor/Rhylanor
Possessions: Tech Level 15 Hand Computer, Electronic Tool Kit, Robot AB-101
Position: Graz Redniz Chair of Computational Robotics at Rhylanor Institute of Technology on Rhylanor/Rhylanor (on sabbatical leave).

Dr. Theodor Krenstein is a gifted, multi-talented scientist, with interests ranging from anthropology and archaeology to xenology and zoology, including most of the "ologies" in between. He holds advanced degrees in computer science and robotics.

After three terms as Dean of the School of Robotic Science at the Rhylanor Institute of Technology, he was appointed to the Graz Redniz Chair of Computational Robotics, a prestigious and coveted position. He has to his credit 12 books, over 100 articles in technical and scientific journals, and holds more than 250 Imperial patents for his inventions and computer work. Despite this, he has become bored with academic life, and realizing his age, he has taken an extended sabbatical in order to make forays into other parts of the Imperium.

During a test of Scout survey robots in 1090 on Pannet/Rhylanor, members of a disgruntled anti-technist group kidnapped Dr. Krenstein and threatened to kill him if the Scout service didn't meet their demands. A young scout named Dur Telemon was part of the all-volunteer raiding team that finally freed Dr. Krenstein; in fact, Dur was the first to reach the Doctor.

In the following year, Dr. Krenstein constructed his personal servant and bodyguard, AB-101.

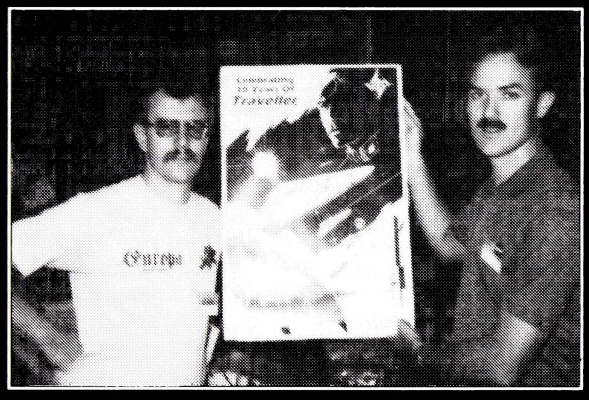
AYBEE WAN OWEN
Valet FD9C8B Age 19(?) 0 terms Cr0
Medical-1, General Language-1, General Vehicle-1, Lt Laser Welder-1

Constructed: 1091 on Rhylanor/Rhylanor
Position: Personal servant and protégé of Dr. Theodor Krenstein.

AB-101, affectionately known as "Aybee", is a pseudo-biological robot designed and constructed by Dr. Krenstein. His UPP, skill levels, and other personal data are approximations, calculated by comparing human norms with Aybee's abilities. Although his programming gives him certain basic abilities, because of his lack of true artificial intelligence he can make errors in judgment; in abstract situations, this effectively lowers his true skill level.

Aybee's "weapon" is a light laser welder, built into his right arm. Dr. Krenstein has designed Aybee in such a way that his arm (ostensibly used only as a tool) can pass inspection by officials, since laser welders are not restricted by local law levels; however, voice override controls allow Dr. Krenstein to use Aybee as a weapon at short range.

10 Years of Traveller



Left: Marc W. Miller; Right: Stafford Greene (Seeker)

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ONWARD AND UPWARD

"You know, Kidd, it's almost too bad that we made it to Capital," Dur said.

Akidda Laagiir looked up from his holorecorder controls and stared his nephew in the face.

"What? You told me last night that you were having the time of your life here."

"Yeah, that's what I mean. Now that we're here, I guess we'll have to go back home. We can't hang around the Emperor forever."

"Forever, nothing. We spent maybe ten minutes with him, and as far as I can tell now, he doesn't know we exist." Akidda shook his head slowly back and forth.

"You at least got to interview him, but we're nobodies now," Dur said. "Being a knight is great unless you're on Capital. Everybody here is a noble of some kind. I'm enjoying myself, sure, but it was kind of fun on those other worlds, being the big shot. Too bad we have to go back."

The door to the hotel room opened as Akidda answered him. "Still, it will be nice to get home again. We'll be local celebrities there, you know."

Dr. Theodor Krenstein and his robot companion, AB-101, entered the room, the doctor with a look of consternation on his face.

"Who's going home?" he asked. "You make it sound so simple."

"Is something wrong, Doc?" Dur was quick to speak up.

"I think we've been hoodwinked, that's all." Krenstein threw himself into a nearby chair and slouched down into it.

"What do you mean, hoodwinked?" Dur asked.

"Hoodwinked—as in, 'I'm too depressed to even want to talk about it.' Tell them what we just found out, Aybee."

The robot hesitated for a moment, deciding where to start his explanation, and then spoke. "For services rendered on Jode, in Deneb Sector, the four of us were knighted into the Order of the Emperor's Guard by the Duke of Deneb."

"Sure, Aybee, we know that. What's the problem?"

"You remember, Dur, that at the time we were given Imperial space-required vouchers together with invitations from Emperor Strephon to come and be knighted officially by him at a ceremony on Capital?"

"Sure, I remember. It's been a real blast, travelling first class, bumping other passengers when we wanted to, living like kings—or knights, at least—so what's the problem?"

Akidda suddenly looked worried. "Wait a minute," he said. "I think I know what you're going to say, Aybee, and I'm not sure I want to hear it from your lips. Hold on a second while I check this out myself."

The journalist rummaged through a small case next to his holorecorder, eventually finding a holocrystal marked on each end with the Imperial seal. He popped it into a hole on one side of the recorder and fiddled with the controls.

A few seconds later, a small three-dimensional image of the emperor was projected above the tabletop. "The bearer of this voucher, Sir Akidda Laagiir, is a loyal subject of the Imperium. At my invitation, he is travelling to Capital. I hereby request any Imperial interstellar passenger service to cooperate with Sir Akidda in making his journey possible. You will be reimbursed for any expenses you incur in his trip to the Imperial Palace." Seconds later, the image faded, followed by a fuzzy dance of colored lights and static.

Akidda switched the projection off and pounded his fist softly on the table. "I knew it, I knew it, things were too good to be true, we never should have come here."

"I still don't get it," Dur said. "We each have one of those, don't we? We just show 'em to the porters at some starship, and they check out those lights at the end with that gizmo they've got, and they let us on. So what's the problem?"

"Here, Dur, let me play part of this again." Akidda moved his fingers lightly over the controls. A tiny, silent image played itself a few centimeters above the console of the holorecorder while Akidda adjusted the device, then Strephon's image appeared again above the tabletop.

"—travelling to Capital—trip to the Imperial Palace—travelling to Capital—trip to the Imperial Palace—travelling to Capital—trip to the Imperial Palace—" Akidda jumped the image back and forth between the two phrases.

Dur's eyes grew wider and he rose halfway from his chair. "You mean to say—"

"That's right, Dur," the doctor said. "The vouchers are only good to get us here. We can't use them to go back ."

"Then how do they—"

"Most nobles never use the vouchers they get, for that very reason. The ones that do come are the ones who can afford the return trip. Usually, new nobles just hang the things on their walls as momentos."

"Then we're stuck here for the rest of our lives?"

Akidda laughed. "No, Dur, we can work something out. We'll make it back."

"Sure, that's easy for you to say. You're in the Travellers' Aid Society, and you haven't used a ticket now for a couple years. And you, Doc, you're plenty rich, you can afford the trip. You can put Aybee in a box and send him as baggage, if you need to—"

"Dur!"

"Sorry, Doc, but I'm upset about this. If you'll recall, I barely had enough saved up to make it to Jode in the fist place. The Scouts don't have a retirement plan, you know."

The others knew by now to keep still when Dur got upset.

"Do you two big spenders have any idea how much starship tickets cost? Do you realize how far away from home we are? Can you calculate how old I'll be by the time I work my way back? Sure, it's nice to travel, but I can't afford one jump, let alone all the way home."

Dur was just getting warmed up.

"That's why I joined the Scouts in the first place, so I could travel, and I got to see a lot of the Spinward Marches that way. I don't want to sit at home on Rhylanor, don't get me wrong about that, I've enjoyed the trip so far, but I don't want to sit here on Capital, either. I want to see a few more new things before I settle down."

"Krenstein, there must be more to this than you're telling us," Akidda said.

"I'm afraid there isn't, Akidda." The doctor shook his head. "I couldn't believe it, either, when I was making our arrangements to head home. I showed my voucher to the Tukera Lines steward and explained that there were three more of us, and he just laughed."

"Should have had Aybee shoot him, Doc."

"Dur, be serious," the doctor continued. "I went and talked to Eneri Balan, and he said—"

"Who?" Dur asked.

"Eneri Balan. You remember, the protocol clerk who briefed us on etiquette before we met Strephon."

"Oh, yeah. So what'd he say?"

The doctor sighed. "He said that he was terribly sorry over the misunderstanding, but there was nothing that he could do about the situation."

"Should have had Aybee shoot him, Doc."

The other two humans glared at the Scout. "We do have some options in getting home, Dur. We could pool our

resources so that you—"

"Hey, Doc, I don't want to take charity from you guys."

"Consider it a loan, then."

"No, I still don't want it. I'll pull my own weight or I'll stay here. Drop me a letter from Rhylanor when you get there."

The four fell silent again.

Aybee finally spoke. "Doctor Krenstein, if I may interrupt your thinking, there is another possibility that you may not have considered."

"Yes, Aybee?"

"It seems so obvious, I expect that you have already considered this option and discarded it as impractical."

"Let's hear it, Aybee. Sometimes the obvious is easily overlooked." While Aybee did not have true artificial intelligence, his ability to generate alternatives sometimes made him appear to possess genuine creativity.

"Doctor, you have been discussing the problems you have so far encountered in arranging a trip back to Rhylanor. Simultaneously, you have all expressed dissatisfaction with staying here on Capital. But as a third alternative action you could—"

"Doc, can you reprogram him some time so he explains stuff faster? Sitting through all this drives me nuts." Dur drummed his fingers on the armrest of his chair.

"Dur, we're all impatient. Please just let Aybee finish."

"Thank you, Doctor. As I was saying, we have a problem in travelling to the Spinward Marches, and none of us wish to remain here."

"See what I mean, Doc? He just said all that a minute ago."

"Dur, let him finish! Aybee?"

"So, since all of you have expressed an interest in travel, why return home? Why not continue travelling farther, and return home later, if returning home now is too difficult?"

Krenstein shook his head. "No, that won't work, Aybee. Our only real problem in returning home is the cost. It would cost just as much to travel on as to go back."

"Wait, Doc, I like it."

"But Dur—"

"Aybee's got a point. I want to travel, I want to go home, but I don't have the money, and as long as I can't afford to go home, I may as well go somewhere else."

"But Dur—"

"This is great, Doc. I take back anything bad I ever said about Aybee. Travel onward—just think of the things to see. We could even go to Terra if we wanted to."

"But Dur—"

"Yeah, we're going to Terra. This is the chance of a lifetime. You guys can sit and talk if you want to, but I've got to go pack my bags."

"But Dur—"

The door slammed behind the Scout as he left the room. Krenstein turned slowly toward Akidda, his brow furled. "Akidda, did I just see..."

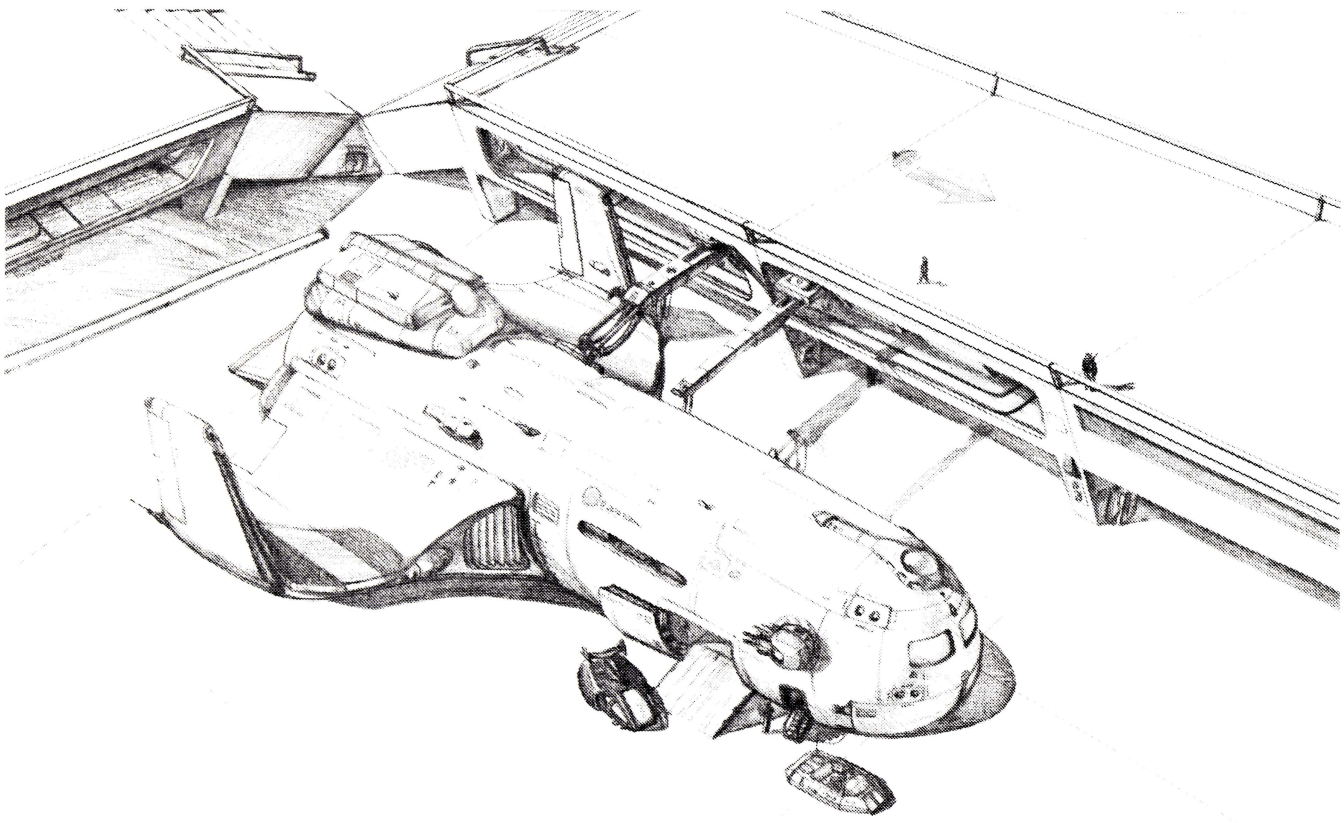
"I don't understand him, either, Krenstein, but there is something to it. If we could somehow earn money along the way, we could make such a trip. You and I can always help Dur out if we have to, but meanwhile let's just see how far we can get on someone else's ticket. We all have useful skills we could sell to someone. Admit it—you've always wanted to visit Terra, haven't you?"

"Well, sure, Akidda, but Terra is still a long way off. I don't think we're halfway there yet."

Aybee spoke up. "We've travelled sixty-eight percent of the distance, Doctor Krenstein."

"There, you see, Krenstein? Aybee's already got our itinerary figured out. I think I'll go pack, too."

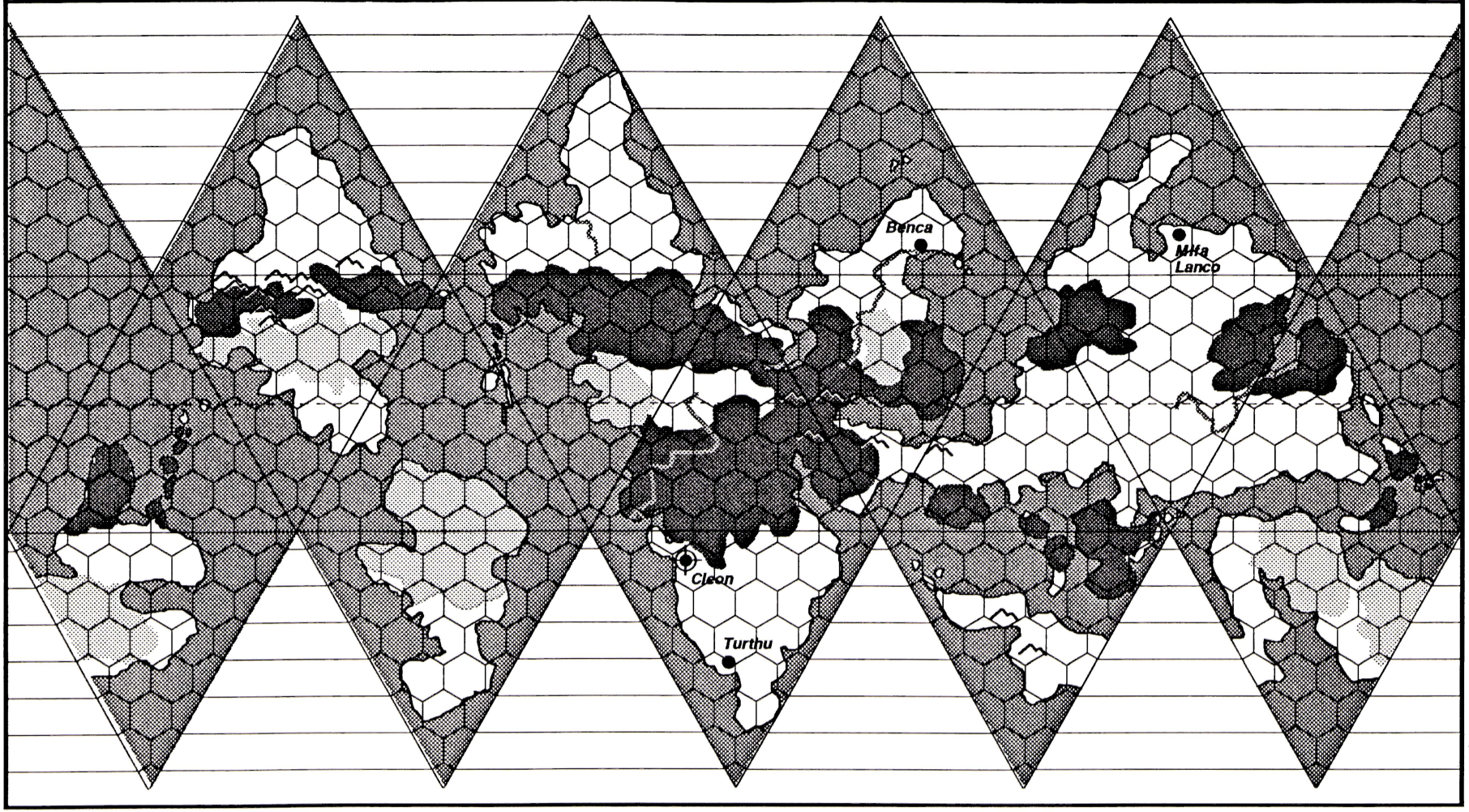
After Akidda walked out, Krenstein sat quietly for a little while, shaking his head slowly back and forth with a glazed look in his eyes. "All right, Aybee," he finally said. "Pack our bags."



WORLD MAP GRID

This geodesic map grid divides the spherical surface of any globe into twenty triangles, each of which is further divided into hexagons. Note terrain identities and other planetographic features of the world in these hexagons. Total number of map hexes per triangle: 25. Total number of map hexes: 500.

1. Date of Preparation	2. World Name *(and UPP)*	3. Hexagon Scale in Kilometers (circumference divided by 35)	4. Subsector and Sector Location of World
	Capital A586A98F	687 km	Core — Core 2118



IS Form 21

World Map Grid (Large)

Map Terrain Key

- Settled
- Ocean
- Major Metropolis circa 5 billion
- Mountains
- Steppe
- Jungle

Reference, Center of the Imperium

Reference is a planet little known by most Imperial citizens, despite the fact that it boasts a Scout base, a Naval base, and a research station in the system. Reference is not on an X-boat route, but instead merits its very own X-boat system, run by the Scouts privately to convey their own data back and forth from the system.

In fact, Reference is traditionally not shown on maps of the Imperium, because by definition all points in the Imperium are measured from this point of "Reference". (This explains the change in name from the original Mamatava to Reference at the time of the Second Grand Survey.)

Geographically, Reference is a dry airless world, with no real natural resources worth exploiting. Historically, it has "not existed", for various reasons, from the time of the First Imperium.

During the latter days of the First Imperium, military scientists wanted a top-secret location at which they could conduct research on starship weaponry. The barren, uninhabited rock known as Mamatava was ideal for these purposes. A dome was built on the surface of the world, with various tunnel complexes dug out of the caverns beneath the surface, and the scientists and their equipment moved in. Even at that time, it was Imperial policy not to show Mamatava on maps; this was no real inconvenience for interstellar commerce, because Mamatava had no gas giant or water source, so it was not part of any established jump-1 route.

During the Interstellar Wars between the Solomani and the Vilani, the Mamatava facility continued its research, hoping to lend valuable assistance to the Vilani side, but to no avail. Before any significant breakthroughs could be made, Solomani scouts discovered the facility, and it was captured. The scientists were moved from the laboratories into the domed living facilities on the surface, and all research work at Mamatava was stopped. The world was declared off-limits to non-military vessels, but otherwise largely ignored by the Solomani conquerors during the time of the Ramshackle Empire.

During the Long Night, Mamatava was like many worlds: interstellar trade to it stopped. This, however, was not real change to the Mamatavans, who had prospered for many years cut off from the outside. Mamatava continued in this way, and the inhabitants grew more culturally self-centered over the years. The record of the original research station was lost, and the small number of inhabitants was not rediscovered until the Imperial Grand Survey conducted in the second half of the fourth century of the Third Imperium.

Unfortunately, what the Scouts found remaining of the Mamatavans was not pretty. The population had become violently xenophobic, wishing to avoid outside contact at any costs. Sophontologists from the Scout Service decided that the Mamatavan culture was too fragile to survive such contact, and the world was declared a Red Zone.

Meanwhile, the Scouts were accumulating such vast amounts of data from the Survey that they needed special facilities in which to store it. It was at this time that the Mamatavan research station, far under the ground, was discovered. In 399, this research station was refurbished as the repository for the Grand Survey data. Simultaneously, the world was renamed Reference and used as a point of origin for measurements in the Imperium.

That vast collection of survey information is still there, almost all of it in its original form. The Scout Service has decided that it is easier to keep a special staff of engineers and computer scientists on hand to keep their old, outmoded computers running than to spend the time and effort necessary to convert this data to a different form during a large-scale conversion effort. Naturally, more computers and more data were added to the Reference base during the Second Grand Survey.

Not only the information from the First and Second Grand Surveys is held, but also survey information collected by the various governments of member worlds in the Imperium, who choose voluntarily to store such data at Reference, so it is available for research purposes.

Not all worlds choose to do this, of course, but many have decided on this course of action because a permanent record of property holdings and census and natural resource data can be kept permanently on file, despite the vagaries of changes of administration in these local governments.

The computer facilities on Reference are thus contained in vast underground caverns, sealed in sections to provide safe airtight environments for the equipment. Communication between different sections of the facility is carried out by laser beams, shot through panes of double-thick safety glass. The lasers allow the various sections to be kept airtight more easily, because no physical connection between areas needs to be established. The panes of glass are manufactured in a process similar to that used in making battle dress, so they can easily withstand the pressure differential between areas.

With 11,000 different worlds in the Imperium, there are far more than that many computers in the Reference data base. Each computer is used to store the information for one world. Individual computers are not networked together per se, but communication between all the machines is established for maintenance and, on an ad hoc basis, for special research projects needing access to several worlds' data at once.

REFEREE'S SYNOPSIS

After a variety of minor adventures along the way, the characters are appointed by the the Moot to investigate why the Scouts no longer recognize a certain noble's title to a certain parcel of land, claiming instead that it is public property and thus denying the noble of proper noble status. The original records for the parcel were destroyed in an accidental fire on the noble's homeworld some years back, and the characters must now travel to Reference to look up the original facts.

In fact, the land has been "reallocated" by an overly presumptuous artificial intelligence project at the Reference facility, that mistakenly decided that inheritance of property is wrong and that the parcel should revert to the public's use. This should not be too difficult to discover by our intrepid team of adventurers.

Meanwhile, the party has been introduced around the facility as a "special investigation team", and that has some individuals worried. It seems that these individuals have been shorting the Scouts on certain materials contracts, and are (mistakenly) afraid that the four characters have been sent to Reference to dig out the culprits behind this fraud. In an effort to save themselves from exposure, an "accident" is arranged to kill or incapacitate the characters. This is easy enough to arrange by making use of the vacuum of some areas. While the characters are all together, the villains evacuate all their air, expecting them to die in the process. Instead, Aybee uses the new oxygen supply the Hivers installed in Adventure 8 to save the day. With

any luck, the culprits are then discovered and apprehended.

Also during the course of this adventure, the characters encounter a small girl, about six years old, and quite lost and frightened. She does not speak Galanglic, or in fact any language recognizable by anyone at the Reference facility. As it turns out, she has snuck down from the surface's domed city (Mamatava), through a series of tunnels its inhabitants have dug into the Reference Scout base.

The Mamatavans have recently decided that their soil supply is showing serious signs of depletion, and crop yields are doomed to fall to dangerously low levels if something is not done about it. The leaders of the complex do not wish to ask for outside assistance; such an invitation would most likely lead to unnecessary and unwanted further contacts after the immediate problem was solved.

Instead, the rulers have decided to make use of their mining technology to dig into Reference's surface. Although the world does not boast any natural resources, there is in fact a plentiful supply of materiel to those who know where to look. The Mamatavans have dug into the Scout supply room and are helping themselves to food, water, and machinery.

Once the party realizes that the girl is from Reference's surface, they must decide what to do with her. She is not sure of the way back, and it is quite possible that the Mamatavans will believe she has been kidnapped by the outsiders. The characters will have to exert some careful diplomacy to avoid a hostile confrontation between the Mamatavans and the Scouts on Reference, thus opening up the domed city for future beneficial contacts.

It is still widely believed, as determined by the First Imperial Grand Survey, that the surface population is "violently xenophobic". Descended from the original humans who inhabited the Mamatava scientific research station during the First Imperium, it is thought that they would attack anyone who tries to enter their domed complex or who even attempts to make contact. The individual Scouts themselves have been strictly ordered to make no contact with this indigenous population; to do so is punishable by immediate discharge from the service (along with a hefty term in the stockade, and probably a fine).

The Mamatavans have in fact mellowed out quite a bit since the last outside contact, and should not react violently unless they are met with hostile overtures. The characters will have to discover this themselves in their attempt to return the lost girl to her city above the ground.

GET A JOB

The characters must spend time seeking a "working passage" from Capital: someone willing to pay them enough to buy a ticket, or to allow them to travel free for some service rendered. In fact, Dur's worries (in the opening dialogue) about being stranded are groundless. Of the four characters, he has the most valuable starship skills, and he should have little difficulty in hiring on a ship. In addition, his status as a Scout (once a Scout, always a Scout) and his knighthood should stand him in good stead if he can find two worlds to travel between, both of which are Scout bases.

Dr. Krenstein has a few skills that could be useful on a starship, including his robotics-5 (equivalent to computer-4), JOT-2, grav vehicle, electronics, mechanical, and medical.

Aybee for his part has medical-1, which could qualify him as ship doctor on a small ship. Also, his valet-1 skill is equivalent to steward-0, so he could assist a steward on a starship.

Akidda? Lucky for him that he's in TAS, because few starship captains will need his skills on board.

LEGS OF THE TRIP

The suggested route of the four adventurers follows the X-boat route from Capital/Core through Anther/Chant, Velpare/Cemplas, Bogustin, and Ye-Lu, to Celetron; from Celtron the adventurers will travel through Bunkeria Subsector via the jump-1 trade route on to Reference/Cadion. A map of Core Subsector appeared in *Travellers' Digest* Adventure 8; maps of Cemplas and Bunkeria Subsectors appeared in *Travellers' Digest* Adventure 9; maps of Chant and Cadion Subsectors appear elsewhere in this issue.

If the characters do not follow the suggested route, or if you decide to use your own smaller scenarios along the way, all you need to do to eventually start the "main adventure" is to make sure that the first and second messages from Eneri Balan reach the characters along the way.

CAPITAL TO VELPARE

Leaving Capital, the adventurers' best bet is to check the want ads. Looking through trade newspapers and talking with people at a starport or at various starport bars will yield the following leads. Some, of course, are less desirable than others, for one reason or another.

"Wanted: Starship crew for Capital to Shudusham route." Unfortunately, this is heading in the wrong direction.

"Wanted: Crew member for the *Blunderbuss*. Inquire at Dock 114F." The characters would be foolish to get on a ship with such a name, and once they get a good look at the vessel, they'll look elsewhere for passage.

"Wanted: Scientific escort team to transport rare animal to Velpare. Scouts preferred. Inquire at such-and-such a place."

This sounds like the ideal job (and in fact is the preferred way to get the characters to Velpare), but is it really? It turns out that the "rare animal" is the oegongong, described in *Challenge* 27. If you have that issue, full details (for the referee's eyes only) can be found there. If not, suffice it to say that, while the job sounds easy enough, the nature of the oegongong is such as to cause problems for the characters later on. If any of your players have read the complete article on the oegongong, you will have to work a little to assuage their fears, assuring them that task at hand is perfectly safe and will cause them little difficulty.

The oegongong is a creature native to Vargr space, and the characters will not be able to find out more about them from local sources because of their rarity and alien nature. The oegongong starts out live as a small water creature, but as it grows small sacs on its skin fill with hydrogen, until the creature is lifted completely out of the water and actually carried away with the wind. From its aerial position, the adult oegongong (which is hermaphroditic) drops sticky egg masses, which fall to the ground far below and burst, thus mixing the mass in such a way as to fertilize the eggs.

Because of the rarity of the oegongong, and their complicated life cycle, live specimens are hard to come by in Imperial space, but a zoo on Velpare has commissioned some, and went so far as to send a zoologist to Vargr space and back to retrieve the fragile creatures. Several times during his return, the captive oegongong have grown to adult size, and each time he has carefully "milked" the creatures for their egg sacs, pounding them with a mallet to create the fertilized eggs for the next generation.

Unfortunately, the oegongong is poisonous, and while a single sting from its sharp tail will not kill a man, multiple stings can be quite deadly. In a careless moment, the zool-

ogist was attacked by the oegongong and killed. The adventurers will *not* be told of this, only that the zoologist bringing the creatures back is unable to continue, and that other keepers are being sought for the job. The characters will be told that the oegongong are "mildly poisonous", and that reasonable precautions should be taken. No antidote to the poison is available on Capital. The basic life cycle of the oegongong will also be explained to the characters; they will be assure that the creatures are in their primary (water) stage, and will not start to swell up until long after they are safely delivered to Velpare.

A local zoo has the oegongong now, and has arranged with the zoo on Velpare to arrange that the fascinating creatures are sent on their way. They have thus placed the advertisement, and you should do what you can to insure that the characters answer it. The local agent will be reluctant to pay for four high-passage tickets, but will finally agree to pay for four mid-passage fares, from Capital through Anther to Velpare aboard a jump-4 passenger liner. The job should be an easy one, but it is of course imperative that the oegongong arrive safely and alive. All the proper permits for the journey from Capital to Velpare have been secured and are in order.

The small amphibious creatures are contained in a cage setup that allows some "land" (dry) area besides a tank of shallow water. Separate cages contain live fish and live mouse-like mammals for the oegongong to feed upon. All of the cages must be kept in one of the character's cabins, because the hold will not be pressurized during the trip. If the characters think ahead, they will assign the oversight of the oegongong to Aybee, who is of course immune to their poison.

JUST A LITTLE TROUBLE ALONG THE WAY

There are several ways you can spice up this "simple" task. If the cages are ever left entirely alone, make sure that the mice escape. The characters must look for them; any crew members apprised of the fact that mice are loose on the ship will not be pleased. The oegongong themselves have voracious appetites, and seem to eat as often as food is given to them, although they will not eat food that they do not kill themselves. If the characters pay close attention, they will realize after only a few days that the lifecycle of the creatures is much faster that they were told. The oegongong already show signs of starting to swell, and they have grown to be about twice the size that they were when the journey started in Capital. Let the characters worry about this: if they cut down on the food supply, the oegonong look ill (perhaps one even dies), but if they keep feeding them, the creatures keep growing.

When the starship reaches Anther, the crew reports that some trouble with the jump drive will unfortunately delay the next leg of the trip by a few weeks. This is inconvenient, but is not really a problem—the characters can just move the oegongong to another vessel, continue to Velpare, and get reimbursed for their expense later. Not so fast! While the characters do have permits to take the oegongong to Velpare, they do not have permits to take the creatures to Anther, and the local authorities will under no circumstances allow the oegongong off the ship. Anther is a desert world, and a loose oegongong could become a significant nuisance. (Sure, and Anther not only has no water, but also no atmosphere. Silly? Yes, but that's the way the bureaucratic government of Anther works.)

The oegongong, meanwhile, will need more food. Live fish and small mammals can be easily purchased locally. Otherwise, the characters can reduce the ensuing delay only by helping to repair the drives. Do not suggest this to them; they must think of this on their own. If one or more of the characters can succeed at the following task, the time needed to repair the drive will be shortened by a week.

To repair the damaged jump drives in this adventure:
DIFFICULT, engineering, edu, 2 hours
REFEREE: Each time this task succeeds, the time needed for the crew to repair the drive will be shortened by a week. Without any successful rolls, the crew will need four weeks. If Dur or another character can make four successful rolls, of course, the drive is totally repaired.

Once the drive is repaired, the ship continues on to Velpare. The jump is uneventful, unless of course the characters should leave the oegongong's food supply unattended again: what we need around here, it would seem, is a good cat. The oegongong themselves will continue to get lighter and lighter; if the trip is seriously delayed, they will arrive at Velpare fully swollen, pressed up against the ceiling of their cage. One other note: since the oegongong's flotation sacs are filled with hydrogen, they must be kept away from open flame or other sources of combustion. A word to the wise is sufficient, but again, if your players are careless, they may have a real mess to clean up (and no oegongong to deliver at Velpare.)

Whatever difficulties the characters have in this babysitting job, the final insult will hit them at Velpare. The local zoo is quite upset that the oegongong are so late; a nasty zookeeper chews the characters out for this despite their protestations.

VELPARE TO BOGUSTIN

Velpare has an Imperial Scout base. If the characters think to inquire at it, they will learn that there are semi-regular vessels travelling between Velpare and Bogustin, jump-3 away, which also has a Scout base. Your players may need a little coaching from you here to learn how to hitch rides with the Scouts. Remember that in Adventure 1, the four characters broke up a Zhodani spy ring that had infiltrated a Scout X-boat station at Jode/Pretoria, after the psionic masters had killed one of the Scouts stationed there. This is the very incident for which the characters were knighted.

While the whole affair was immediately classified, and the characters (and the other Scouts involved), rumors of the incident have trickled through the Scout Service, and the four would be able to pull some strings if they mentioned it. Passage to Bogustin is thus easily arranged, although not on a luxury liner by any means.

Once in Bogustin, Akidda will be given the red-carpet treatment once he presents his journalist credentials; the locals will be eager for him to help publicize V'cabi I and the bicentennial. (See the library data in this issue for more details.)

Also at Bogustin, the party receives a message from Eneri Balan, their protocol clerk on Capital. A few words about how messages can be sent to travellers are in order. Using the X-boat system, a message can be sent to "all worlds within Y parsecs", for some particular distance Y. The message then radiates out from the central point; the sender can only hope that the recipient picks the message up somewhere. Because of the natural delays a person experiences travelling, an X-boat message can ususally catch up to the recipient fairly easily. The traveller must remember, however, to check in often to see whether or not he has any messages waiting. (We are assuming the characters have

been doing this all along, but it has not been important to mention before now. It is proper to explain all of this to your players.)

Balan's message is apologetic in tone. He regrets that he was not able to help the characters more on Capital, but he has tried to make amends by recommending them for "a possible position in the future". He can give no more details now, but promises to send another message as soon as he knows more. Thoughtful players will send a reply of some kind to Balan, but it is immaterial to the adventure whether they do or not.

BOGUSTIN TO YE-LU

As the party continues to travel, they will learn that it is not too difficult for knights of the Imperium (particularly well-educated and well-connected ones) to travel aboard military vessels as guests. Krenstein's robotics skill is the obvious choice here, with the Navy footing the bill so that he (and his assistant, Aybee Wan Owen, of course) can come and see their experimental facility at Ye-Lu (see library data for details). Dur can swallow his pride and serve on a Navy vessel for a week. Akidda can use his journalistic pull to get a free ride with the others—besides, they're all knights, and the Navy will try to cooperate if convenient (and luckily for the characters, this time it's convenient).

YE-LU TO CELETRON

The Ye-Lu facility is impressive, with its noticeable dearth of human workers and the bustle of robots moving back and forth in their duties. The starport is a class A facility, and literally everything is done by robots, with human oversight. (Costs at the starport are typical; the extra expense is paid by the Navy as part of its research budget.)

While touring Ye-Lu with the others, Aybee notices a man picking another man's pocket across the way. If he mentions this to someone, it is possible to catch the thief. (Depending on the preferences of your players, one of the characters may chase the pickpocket through the starport, with a fight of some kind at the end. Either Dur or Aybee are likely choices for such an action. Alternatively, a Navy starport security robot can do the chasing.) In any event, once the thief is caught, the victim is eager to reward the "civic-minded citizen who recovered my wallet".

Merv Ramirez, the pickpocket's intended victim, is the owner of the *Lulu Bell IV*, a jump-2 starship. Retired from industry, Ramirez is travelling for pleasure, doing the things that he couldn't afford when younger. As tribute to his rescuer, Ramirez offers passage on his vessel to his next destination, Celetron. (If the character actually chased down the pickpocket, this offer can be made in the form of a job offer as bodyguard.)

With a little bit of salesmanship, the other three characters can be wheedled in to the bargain; Ramirez is, after all, out to see the sights, and four knights could prove to be interesting companions for a little while. (Luckily, the four have many interesting tales to tell.)

CELETRON TO REFERENCE

At Celetron, the characters here from Eneri Balan again, and this time with very good news. The Baron of Wollton, on Kigaru/Ilelish, can trace his family's history back to 685, when (so he claims) Emperor Zhakirov awarded a barony to Admiral Francis Wollton for his service in the Imperial Navy. Today, a dispute threatens to strip Wollton of his title.

Six years ago, the land records on Kigaru were destroyed in a disastrous fire that swept through the main governmental offices in Vitar, Kigaru's capital city. Fortunately, the government had made it a habit of keeping records of land deeds on Reference, as many governments do, so it was no problem to recover these essential data from the Scout facility. Unfortunately for the baron, the records retrieved from Reference showed that his "barony" was public property, and had been for many years.

The government of Kigaru immediately moved to strip Wollton of his title, so he left the world and travelled to Capital. There, he sought an audience with Emperor Strephon, to plead his case. As fate would have it, the protocol clerk assigned to him was Eneri Balan, the same clerk assigned to the four player characters just a few weeks before. When he heard Wollton's story, he realized that he could kill two birds with one stone by having the four characters try to solve Wollton's problem.

After all, Krenstein and Aybee (so far as Balan knew) were computer experts, Akidda Laagiir was a skilled researcher by virtue of his journalistic experience, and Dur was himself a Scout. Wollton was convinced, and asked the Moot to allow them to investigate the matter for him. The Moot has subsequently appointed the four as a Special Investigating Committee to research Wollton's claim to his barony. The characters' knighthood is again requiring some Imperial duty on their part.

The four characters must therefore travel to Reference, find out from the computer records what the real facts are, and report to the Moot. The Baron has agreed to provide passage for the four aboard a fat trader in his merchant company. The ensuing journey is largely uneventful; the fat trader is only a jump-1 vessel, so it follows the main as closely as possible. In a couple places, it uses additional fuel tanks to allow a jump-2 trip without refueling. The captain of the fat trader *Coin of the Realm* is named Dap Varell. (The ship is authorized to travel to Reference.)

ADDENDUM TO THE *GRAND CENSUS* CULTURAL PROFILE FOR REFERENCE

This information is not available to the players until they visit the Mamatava domed city on Reference's surface.

Government Division of Authority: Government and law by tribal custom; current tribal patriarch is Takana, who judges matters on a case by case basis.

Local Customs:

Child named for deceased relatives: When a new child is born, it is named after a deceased relative of the parent's or grandparent's generation. This is fairly easy to do. Because of the small Mamatavan population and the resulting inbreeding, literally everyone is related to everyone else, so the name of any deceased person will suffice. Further, if necessary, a name from an earlier generation can be used. If a particular individual had particularly bad qualities, his name might be "retired" and no longer used. If a real shortage of names crops up, a new one is occasionally invented for the birth.

The anthropological effect of this practice is to naturally limit the birth rate of the Mamatavans, who tend not to reproduce when names are not available. This keeps the number stable so that food and physical space are sufficient for the population.

THE REFERENCE SCOUT BASE

The Reference Scout base is underground, in passages both natural and man-made. The original computers from the First Imperial Grand Survey are still here, as are those from the Second Imperial Grand Survey, kept in operating

order by a crew of technicians who replace and repair parts as needed.

The computers are of many different makes and models, with a variety of operating systems and hardware configurations, making it a complex job to keep everything working. Fortunately, the facility is in the hands of an able administrator, Victor Macvey, a Scout of many years' service. Under his competent direction, the Reference facility runs smoothly, if somewhat bureaucratically. Macvey is not an innovative thinker, but he insists that things work correctly and that every Scout work as hard as he can at his duties.

Macvey is somewhat perturbed that the characters have been sent by the Moot, since in a sense this is an accusation that the Reference facility has erred in its recordkeeping functions. Still, he is used to researchers of all types coming to his base, and those from the Moot must be particularly respected and assisted.

To fulfill this role, Macvey appoints Elber Jufi as liaison officer. Jufi does not devote himself full-time to the characters, but he will help them find things and act as an occasional "gofer", besides introducing them to other personnel at various duty stations on Reference.

TUNNELS AND CAVES

As already metioned, the Reference computers are housed in an enormous complex of natural caves and man-made tunnels. Each area has its own environmental system, all of which are connected into one central network that keeps areas usable by various researchers. Airlocks are built into the doors between each separate room of the facility.

While the computers don't really care whether the room they are in is pressurized or not, humans and most other alien races are more comfortable in normal atmospheric conditions than in vacuum. What this means at Reference is that certain areas are often depressurized at times in order to save money when humans are not working there. When researchers do want to go to a particular locations, however, that area needs to be brought up to snuff environmentally, preferably before the humans get there.

To coordinate this activity, a central environmental computer keeps track of where people are and where they want to go. Some areas, of course, are so constantly inhabited that they are always pressurized, but many others contain human personnel only on rare occasions. Each person at the Reference base is issued a "map pad" for his personal use. The map pad is a flat screen, about 10 by 20 centimeters in size, showing a map of the Reference facility. Each pad is in contact via radio with the main environmental control computer.

Pressurized and unpressurized rooms on the map are color coded so they can be easily differentiated. When a person wants to go from one area to another, he touches the map at the room to which he wants to travel, and a signal is sent to the environmental control computer. The computer then plans the most efficient route to the new room, insuring that the path is pressurized along the entire way.

Rooms along the route are pressurized if necessary, and the map pad shows the route and the pressurization status along the route. By paying careful attention to the map pad (and the safety lights on the airlocks), one can safely travel anywhere in the facility, through one airlock after another.

Some of the caverns in the complex have very high ceilings, and computers can be stacked in high racks thanks to the low gravity on Reference. Technicians often need to use grav belts to reach the upper layers of these computers. (The illustration on page 1 of this issue shows a technician floating above the floor, examining a storage crystal suspected of malfunction. Hanging from his belt on the right side is a map pad. The view is from a security system holo camera.)

THE SPECIAL PROJECT

Reference boasts one project of which Victor Macvey is particularly proud, and he makes sure that it is one of the first things the characters see after arriving. It is hoped that someday the DAGS, or *Donosev* Automatic Grand Surveyor, will be able to survey a world, in Grand Survey fashion, entirely by itself, without human intervention of any kind. (The project is still in a very preliminary stage—a working version of the DAGS is not expected for at least another half century, but small intermediate results are already forthcoming.)

Overseeing the DAGS project is Bran Veri, a brilliant (if somewhat scruffy) scientist, who was assigned to the project four years ago. Before that time, he was working on another artificial intelligence project, studying patterns of land use and making recommendations for deriving the greatest potential value from land.

The DAGS currently consists of a full-size working mockup of a *Donosev*-type holographic survey station. The "holo pit", as it is most often called, is the hub of shipboard survey activity on *Donosev* class vessels. Up to five surveyors sit around the station, each having his own controls for particular survey sensors. The DAGS project is an experiment in artificial intelligence, attempting to replace these five surveyors with a computer.

The DAGS mockup is connected to several other computers, each feeding "sensor" data to the DAGS as it is requested. As mentioned, the project is still in a preliminary stage, but the expert system has already taught the Scouts some things about surveying that they didn't realize. These new techniques are meant to be included in the next edition of the standard survey procedure manual.

Dr. Krenstein and Dur are likely to be quite interested in the DAGS.

INTO THE COMPUTERS

Elber Jufi, the Scout liaison officer, can assist the characters at first so they get their bearings at the facility, and can make sure that security realizes why they are there so they are not interfered with and are allowed access to the necessary materials.

Each world has its own computer system, dedicated to its data. The Kagiru computer has data from both the First and Second Imperial Grand Survey, together with the Kagiru land deed records, so a wealth of information is available. The facts are these: the Baron's claim is legitimate, but the computer records show otherwise. No record of the property exists from the time of the First Grand Survey, because it had not been deeded yet, but the records from the Second Grand Survey and the Kagiru land records show that the property was public property at the time.

How did this descrepancy come about? Four years ago, Bran Veri, the researcher in charge of the DAGS project, was experimenting with a land use expert system. In order to facilitate the project's operations, he set the privileges for the system to be at the top level: in other words, the land use expert system had permission to change any and all data it came in contact with.

Unfortunately, because of a bug in the program, the land use expert system took it upon itself to reapportion land grants, changing deeds in order to "better" use a world's surface. One decision the expert system made was to

change an old noble land grant to a public park. The wronged party in this case was in fact the Baron of Wollton, on Kigaru/Ilelish.

Depending on the actual "real-world" knowledge of computers that you and your players have, you can play out this scenario in any level of detail, requiring a precise understanding of the problem and real puzzle-solving abilities on the part of your players. Alternatively, the characters can solve the puzzle "on their own" without real input from the minds of the players, using standard UTP task rolls similar to the following.

To resolve the Baron of Wollton's problem:
DIFFICULT, computer, int
REFEREE: To resolve this problem, three successful rolls must be made, to represent the following up of leads and incremental understanding of the situation. Only one roll can be made per day, so solving the puzzle will take at least three days of study. (This provides enough time to allow the next plot nuggets below to be triggered.) Remember that Krenstein's robotics-5 is equivalent to computer-4.

If the players are following a different "path" to a solution, other UTP rolls may be called for, using such modifiers as Akidda's interview skill and Dur's experience as a Scout.

If accused, Bran Veri will readily admit that he knew of problems like this one from his earlier researches, but he thought he had corrected all of them. He is innocent of criminal intent, but his carelessness with official survey data will certainly stand as a black mark on his record in the future.

A PLOT DISCOVERED

Meanwhile, some other Scouts are worried. As mentioned in the synopsis, some dishonest characters in procurement have been cheating the Scout Service on materials contracts. In the mistaken belief that the Moot Special Investigating Committee is looking into this matter, these individuals make a foolish attempt against the characters lives.

While the four adventurers are working among the computers one day, someone tampers with the environmental controls for their room, slowing removing its air supply. One by one, each of the characters will tire and fall asleep as he suffers the effects of oxygen deprivation. Under ordinary circumstances, this could be fatal, but in the case of these characters, Aybee's supplemental oxygen supply (allowing vacuum operations for about 10 minutes) saves the day. If you use other characters for these adventures, you must hope that one of the characters still awake will realize what is happening and rescue his companions, or your players may have some dice rolling to do. Thanks to Reference's low gravity, anyone still conscious can carry his companions to safety.

Since the characters survive this attack (assuming, of course, that they do), it is an easy matter to trace the source of the tampering once it is reported. The culprit will not withstand a concerted interrogation, and the four knights will have done the Scouts another good turn by clearing up this little matter. Ironically, if these thieves had not tried to silence the characters' investigation, their own crimes would have gone unnoticed.

LAGNIAPPE

One mystery remains at Reference: the fate of the Mamatava Research Station, and its inhabitants in the dome on the world's surface. (This plot action should occur after the murder attempt, but shortly before or just after the characters have solved the Baron's problem.)

Behind one of the large computers, curled up fast asleep on the floor, is a small girl dressed in unusual clothing. When awakened, the gilr is afraid, and speaks a language unknown to the four characters. Once the characters are able to convince her that they mean no harm, simple communication by sign is possible. The girl is lost, her name is Liira, and she doesn't know how to get back home.

Back home? Of course: she's from Mamatava, the interdicted city far above the underground Reference Scout Base. How did the little girl get here? How can the characters safely (for her and for them) get her back? Have the Mamatavans discovered her disappearance? Talk these concerns up enough to worry your players a little.

The Mamatavans, after thousands of years of isolation, are finally running short of food and equipment. In order to restock their larders, they have dug connecting tunnels from their facility into the Scout Base, and have been helping themselves to the supplies they need. Out of curiosity, Liira has come through those tunnels to the world "outside", and has gotten herself hopelessly lost.

Once the characters realize that Liira is from Mamatava, it should not be too difficult for them to find the tunnels leading up to the surface. But should they follow them up, or push the little girl into them and wish her luck, sending her on her way alone?

The characters are free to refer to the somewhat outdated cultural information recorded during the First Imperial Grand Survey. The outlook for returning the girl is not good: the Mamatavans were known for attacking their enemies with little provocation.

If the characters do want to follow the tunnels up, they reach Mamatava with little trouble. Assuming the characters do not make a show of belligerence, the reaction of the Mamatavans is probably not what they expect. Liira, the daughter of the Mamatavan's chief, Takana, has been sought by the populace for two days, and people were getting worried. Takana would not allow his people to enter the Scout Base to search for her, so the Mamatavans are quite relieved to see her returned safely. Takana regrets the continued isolation of his community, and (with the help of a Scout liaison expert, if necessary) first arrangements are made for continuing contact between the longlost Mamatavans and the Third Imperium.

If, on the other hand, the characters show up "guns a' blazing", the Mamatavans will reach in kind, using the tech level 11 weapons they have available. The most careful characters will travel to Mamatava with concealed weapons (including Aybee's laser, of course) and armor, while showing peaceful intent by their gestures and speech.

NPCs FOR THE ADVENTURE

(Note: These NPCs were generated using the prior service career rules in ***MegaTraveller***).

ENERI BALAN

Protocol Clerk (Bureaucrat)
324795 Age 46 7 terms
Admin-3, Recruiting-3, Liaison-2, Leader-2, Interrogation-1, Computer-1, Carousing-1, Persuasion-1

Eneri Balan is the protocol clerk assigned to the four new knights. In the last issue, he helped them learn the rules of etiquette necessary to meet Emperor Strephon and fit in with noble society.

VICTOR MACVEY

Base Leader (Scout) 9A7B88
Age 42 6 terms
Pilot-3, Computer-3, Sensor Op-2, Survey-2, Medical-2, Leader-2, Vacc Suit-1, Zero-G Environment-1, Survival-1, Electronics-1, Fleet Tactics-1

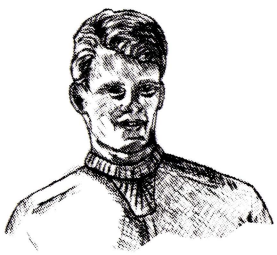
Victor Macvey is in charge of base operations at Reference Scout Base. He is a competent administrator, and eagerly solicits special research projects for his staff, but is slow to change the procedures followed in day-to-day operations at the base.

BRAN VERI

Researcher (Scout) 782AB6 Age 34
4 terms
Computer-5, Sensor Op-5, Survey 3, Pilot-2, Leader-2, Medical-1

Bran Veri is a brilliant researcher in charge of the DAGS artificial intelligence project at Reference Scout Base.

ELBER JUFI



Scout 89D6A6 Age 33
4 terms
Pilot-2, Medical-2, Sensor Op-2, Engineering-1, Grav Belt-1, Mechanical-1, Ships Boat-1, Leader-1

Elber Jufi's situation is similar to Dur Telemon's shortly before Dur mustered out of the service. While Jufi's first love is survey and exploration, he has just been reassigned to a post at Reference Scout Base, and he is considering another line of work.

TAKANA

Tribal Patriarch 16699F Age 44
6 terms
Admin-2, Artisan-2, Electronics-2, Stealth-1, Leader-1, Instruction-1, Chemistry-1, Gambling-1, Grav Belt 1

Takana is another competent administrator on Reference, but he is not a Scout, and in fact is entirely unknown to them. He is, rather, the leader of the Mamatavans, the mysterious residents of the domed city on Reference's surface.

LIIRA

Mamatavan 152835 Age 6
Artisan-0

Liira is Takana's daughter, a cute, well-behaved little girl who likes to draw pictures.

DAP VARREL

Captain (Merchant) 927CB7 Age 47
Pilot-4, Trader-2, Navigation-2, Medical-2, Streetwise-1, Linguistics-1, Engineering-1, Computer-1, Communications-1, Mechanical-1, Broker-1, Artisan-1, Ship Tactics-1, Electronics-1, Vacc Suit-1, Gravitics-1

Captain Varrel has served in the Baron of Wollton's trading company since he was 18 years old, and has steadily worked his way up the ranks by his consistent attention to details. He is competent to serve in any position on his vessel except steward. He is well liked by his crew.¤

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GRAND SURVEY WORLD PROFILE

World Name:	Reference/Cadion/Core†
Location:	Core 0140
UPP:	D100100-B

Physical Data:

Diameter:	700 km
Density:	0.58 standard
Mass:	0.001 standard
Surface Gravity:	0.07 g
Rotation Period:	41.3 hours
Orbital Period:	168.1 days
Seasons:	None
Axial Tilt:	25°
Orbital Eccentricity:	0.01
Satellites:	3 moons: Rupa, Raghuyugau, Bhatta
Surface Atm Pressure:	0.0 atm
Atm Composition:	None
Atm Terraforming:	No
Hyd Percentage:	0%
Hyd Composition:	None
Hyd Terraforming:	No

Temperature:

Base Surface Temp:	199.3°C
Axial Tilt Modifiers:	+15°C, -25°C
Rotation Modifiers:	+1°C, -20°C
Latitude Modifiers:	±3.5°C per hex row
Orbital Eccentricity:	±0.3°C
Other modifiers:	None
Weather Control:	No
Grnhouse Terraforming:	No
Albedo Terraforming:	No

Mapping Data:

Nbr Tectonic Plates:	n/a
Native Life:	No
Terrain Terraforming:	No
Major Continents:	World
Minor Continents:	World
Major/Minor Oceans:	None

Seismic Data:

Stress Factor:	0
Notable Volcanoes:	None

Resources:

Natural Resources:	None
Processed Resources:	None
Manufactured Products:	None

Population & Ports:

World Population:	81*
Primary Cities:	Mamatava; 81; class X
Secondary Cities:	Reference Scout Base; 70,500; class D
Tertiary Cities:	None

†Reference system is prohibited to unauthorized vessels
*at time of First Imperial Grand Survey

GRAND CENSUS CULTURAL PROFILE†

World Name:	Mamatava*/Cadion/Core
Location:	Core 0140
UPP:	D100100-B

Cultural Profile:

Progressiveness-Att:	Conservative
Progressiveness-Act:	Stagnant
Aggressiveness-Att:	Unaggressive
Aggressiveness-Act:	Neutral
Global Exent:	Discordant
Interstellar Exent:	Xenophobic

Technology Profile:

High Common:	11
Low Common:	11
Energy:	11
Computers/Robotics:	12
Communications:	12
Medical:	10
Environment:	13
Land Transport:	8
Water Transport:	9
Air Transport:	0
Space Transport:	11
Personal Weapons:	11
Heavy Weapons:	8

Government Division of Authority: The Mamatava research station, after being taken over by the Solomani invasion force, was ruled as a captured installation. Currently†, the inhabitants of the domed city have no government, but settle disputes by hand-to-hand armed combat and family feuds.

Local Customs:
At the time of contact†, the Mamatavans' strong cultural xenophobia prevented the Scout Service from safely making a close examination of the society. Furthermore, initial reports indicated a fragility of the cultural sanctions for social norms among the inhabitants. For these reasons, a complete cultural survey was not completed, and the Scout Service has interdicted the Mamatava complex from outside contact until a future determination can be made. When the Second Grand Survey was conducted, sophontologists concluded from statistical projections that the Mamatavan society was still overly subject to destruction from outside influences, so direct contact was avoided. Long-range observations, using neural activity sensors and densitometers, were not successful because of the structure of the dome and gravitic devices in the vicinity.

†at time of First Imperial Grand Survey
*Mamatava has since been renamed Reference

PLAGUE OF PERRUQUES

A MegaTraveller Adventure

–By Marc W. Miiller and Gary L. Thomas

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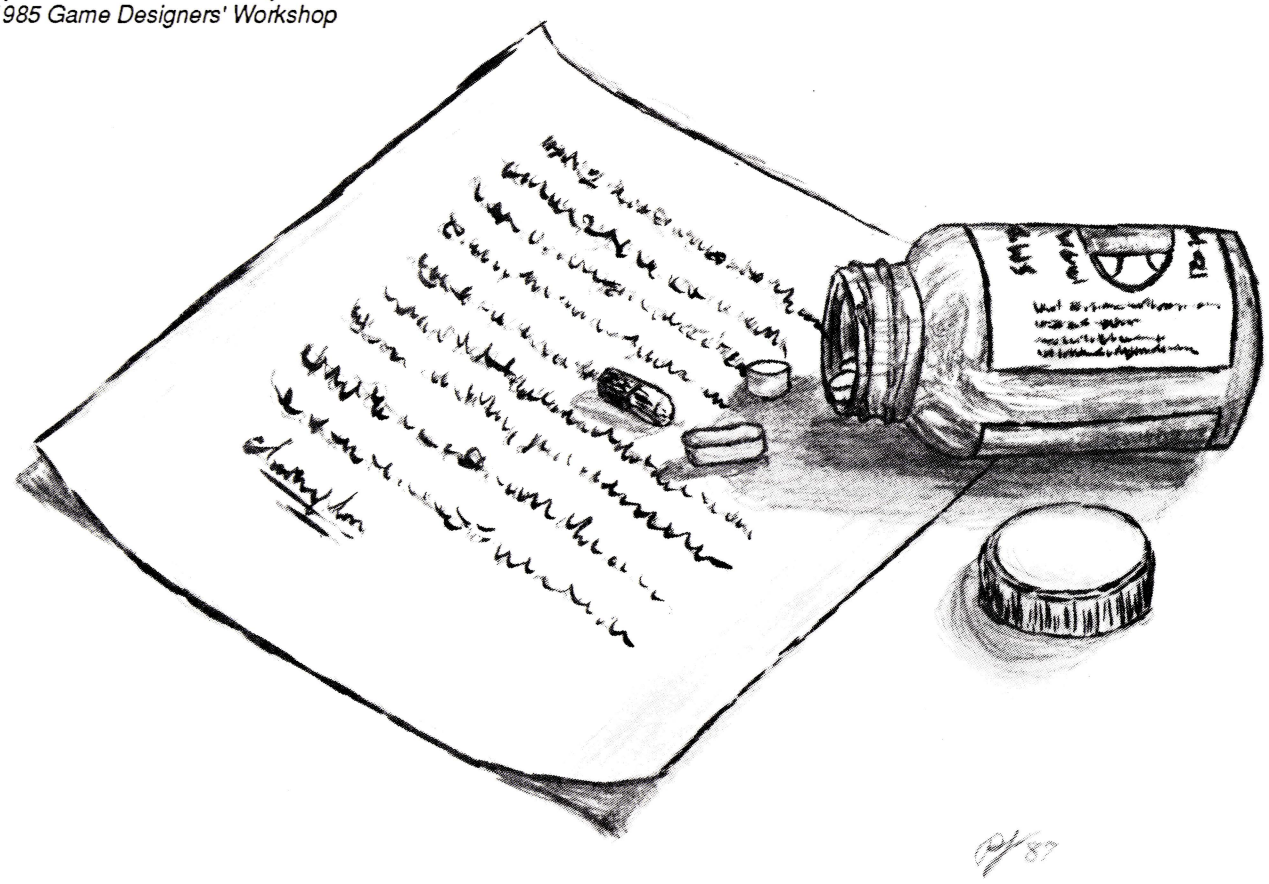


This **Traveller** adventure calls for up to eight characters from any services. While it was originally written as a single session scored adventure for tournament play, it can be played in any number of sessions, depending on how many red herrings or preliminary scenarios the referee wants to include in it. The adventure takes place in Regina Subsector of the Spinward Marches; a subsector map can be found in the ***Traveller*** *Book* or in the *Spinward Campaign* or *Darrians* supplements.

PLAYER INTRODUCTION

The hostilities of the Fifth Frontier War are only recently concluded. Regina Subsector is now recovering from the ravages of the war—many worlds were battlefields, while others were cut off by blockades, sieges, and enemy raiders. With recovery comes a hopeful, gradual reopening of the subsector for interstellar trade.

The adventurers have been recruited by Ganidiirsi hault-Reitan (one of the player characters) as part of an informal team visiting worlds in the subsector. Baron Reitan's purpose is twofold: he has been visiting his own holdings on various worlds between Regina and Efate, and helping in the recovery of these worlds by managing problems.

The entire group set out from Regina some months ago. Baron Reitan arranged passage for everyone along the Spinward Main as far as Efate. Stopovers at each world averaged about a month.

The group has just arrived on Uakye/Regina. The Baron has planned a short stay—primarily to allow a hunting expedition for redbacked slonths, a carnivore native to Uakye. Baron Reitan has contacted a local outfitter, gotten some maps, a few guide books, and an aerial survey.

Redbacked slonths are now in season, migrating to the north shore of Triante, Uakye's largest island. The territory is mostly forest; hunting slonths is a task of locating their spoor and following it until the slonth is found. Slonths leave a vile-smelling trail (exuded from a gland in their tails) which frightens the smaller animals that are the slonth's prey. A network of these spoor trails can channel prey to the slonth, making its hunting easier and more efficient.

REFEREE SYNOPSIS

This adventure has two parts: an initial hunt for redbacked slonths, and then an investigation into the cause of a plague which is ravaging Uakye. The hunt is brief and gives the players a chance to learn to work together; the real action is the search to diagnose and treat the plague.

The adventure begins on 321-1111. The government of Uakye declares a state of emergency on 328-1111.

GEOGRAPHY OF UAKYE

Uakye is locked into a very tight orbit around a star barely bright enough to support life on the world. Uakye's thin atmosphere would cause severe temperature drops at night, cooling the world to plant-killing temperatures.

Uakye's orbit, however, is so close to that of Juna, its star, that the world is tidally locked: that is, it revolves around the star, but does not itself rotate. The bright side always faces Juna, and is blisteringly hot; the dark side is always dark, and too cold to support life. Since Uakye is tidally locked and does not rotate, it has no axis as such. The North Pole of Uakye is therefore considered to be in the center of the dark side; the South Pole is in the center of the bright side. Uakye has one small moon, Uska.

Uakye's surface is composed almost entirely of watery oceans; only about 10 percent of the world's map shows land. Fortunately, most of it is along the twilight zone between the bright and dark halves of the world. To prepare for the adventure, you should sketch out a map of Uakye with the following features. (Each is described in more detail in the adventure below.)

The largest island, Triante, has forest, swamp, and beach terrain, and is the sight of the Baron's hunting expedition. Uakye City lies on the northern shore of this island (toward the dark side). The city is large and sprawling, with a variety of areas of interest to the adventurers: the city industrial park, a residential area, Uakye Down Starport and the Startown region around it, the police headquarters, a commercial center, a hotel complex, and a medical center. You may wish to concoct a separate map of Uakye City for your players, but this is not necessary.)

Directly north of Uakye City is the Shallows, an large expanse of ocean barely more than a meter deep. On the eastern edge of the island is an abandoned military base.

The island of Linradis, small and isolated, lies several hundred kilometers north of Uakye, deep in the dark side of the world. Roughly halfway between Linradis and Uakye City is Staging Point, a remote island outpost for travellers between the two places.

Even farther to the north, in the center of the dark hemisphere, is Mining Colony 78, situated under a large icecap.

INFORMATION GATHERING

By visiting each of the locations and investigating or asking questions, the group can gather enough data to track down the cause of the plague. The procedure is to go to as many places as possible, talk to people, and correlate the information found.

RUMORS

At each major map location, the characters may hear one or more rumors: true, false, misleading, or potential clues. Each time the group arrives at a new location, its rumors should be presented at the first reasonable opportunity.

Most map locations also have a "fact" which the players can discover only by more serious digging. Some of these explain the truth behind the rumor; others are unrelated to the rumor but germane to the adventure.

THE PLAGUE'S CAUSE

The cause of the plague is known on one level: it is propagated by a virus which infects a fungus spore. The spore is propagated by the wind. Some prevention is possible by absolute isolation: wearing vacc suits seems to work.

On another, deeper level, the plague is a mystery yet to be solved. There is no precedent for the disease; medical researchers show no previous record of it ever having occurred on Uakye. Where the plague came from is a question that will need to be answered by the adventurers.

In fact, the plague is a genetic experiment gone wrong. The virus was developed by Antel Kiriolion, a staff researcher at the IGS Geneering Laboratory, inspired by reports of similar plagues used as biological weapons by the Zhodani during the recent war. A sample of the finished product was to be sent to the Imperial Navy at Efate, but the sample, poorly packaged, got loose and started the plague on Uakye.

The courier, Lars Intron, travelled from the IGS laboratory through Staging Point to Uakye City. There he showed his first symptoms and checked into a hotel. He was found dead by the hotel staff several days later. They reported the death to the authorities; his luggage, including the damaged container for the plague are in storage at the hotel.

Other possibilities that the characters might investigate are that the plague is a Zhodani biological weapon, a plague carried over from another world, or even a naturally occurring plague that has not been noticed by scientists before because of its rarity.

THE HUNT

Redbacked slonths are an interesting carnivore native to Uakye. They are 200 kilogram pouncers with claws (item 11 on the Forest terrain animal encounter table). The Baron's hunt for them is a pleasant diversion which he has been looking forward to for several months. The redback skin of the slonth is a delicate, velvety hide which makes an exotic leather. The Baron wants that leather to make a cape.

The new essay in this issue, "Hunting in **Mega-Traveller**", provides information for the referee on conducting the hunt for the redbacked slonth.

THE PLAGUE

Upon return from the hunting expedition, the group finds that the situation has changed considerably since they left Uakye City. A fast-acting disease has swept the city, affecting nearly 30% of the population. Medical and government officials are overworked and overwhelmed, fully occupied in just trying to relieve suffering among the afflicted.

Symptoms: The plague's most visible symptom is a perruque—a cap of fungal fibers that cover the top of the head like a wig. The grey fibers completely cover the victim's own hair, obscuring the natural hair color.

Other symptoms of the plague are more serious: high fever; a thin opaque film over the eyes creating blindness; unconsciousness, coma, and death from brain damage.

The progress of the disease is swift. The first sign is a mild fever. A few threads of grey fiber appear at the roots of the hair within a day, and completely cover the skull within three days. By the third day, vision is dimmed by the film over the eyes and the fever increases in intensity. By the fifth day, the patient is blind and racked by high fever.

A crisis occurs on the seventh day. If the fever breaks, the victim usually recovers. The film over the eyes melts off; the fibers on the skull grow brittle and are shed (along with the natural hair—survivors are bald until their hair grows back). Recovery is complete within 10 days of onset.

The crisis on the seventh day is crucial. If the patient does not survive the crisis, his condition rapidly deteriorates: death follows within 24 hours. About 50% of plague victims do not survive the crisis.

Treatment: Early in the course of the disease, there is little that can be done. When the fever starts to rise, the patient must be kept comfortable and fever suppressants

administered. Antibiotics can help reduce complications, but don't appear to help in treating the disease itself.

LINRADIS, IGS ENGINEERING LABORATORY

Imperial Geneering Systems maintains a remote genetic engineering laboratory on the island of Linradis. The isolation is deliberate and serves two purposes: it helps reduce contamination if there is an accident, and it keeps the workers' attention on their work and away from the distractions in the city.

Antel Kiriolion is a researcher at the laboratory and he is available to discuss the plague and its effects on Uakye City. His superior, Resian Talbot, is the director of the laboratory, but has been on the job for only a short time.

Rumor: One of the lab's staffers comments that the former director, Tanissa Levant, was fired for inefficiency.

Fact: Kiriolion has been working on a biological agent similar in effect to the plague currently in Uakye City. Unfortunately, his lab has no remaining samples; all were sent (along with a final report) to the Naval Base at Efate about two weeks ago. The courier, Lars Intron, took the materials into the city and was then going to take two weeks vacation in the city. He has not yet returned although he is now overdue. Kiriolion has an electron microscope profile of the IGS plague sample; if compared with the Uakye City sample, they match.

IGS has a tentative vaccine for the plague, which should work on about 60% of the population. The vaccine should stop the spread of the disease.

POLAR SUBSURFACE CITY

An especially rich vein of iridium runs along the floor of the ocean of Uakye near the north pole. To exploit it, a mining settlement has been established under a dome on the floor of the sea. The settlement is controlled and owned by Ling Standard Products; its designation is MinCol78—Mining Colony 78.

A platform raised fifty meters above the ocean surface allows vehicles to land and be lowered to the city by elevator. The city has as yet been untouched by the plague. The local city leaders are aware of the plague in other parts of Uakye, and are determined to avoid its reaching MinCol78. They will allow the adventurers to interact by video with whomever they need to talk to.

Rumor: Their search radars record a ship landing in the Shallows recently.

THE SHALLOWS

A section of the sea on Uakye north of Uakye City is exceptionally shallow—between one and three meters deep, with a floor of solid bedrock. A starship has recently crashed here after successfully entering atmosphere. The wreck lies half submerged in the center of the shallows.

The ship, named the *O'Shaunessy*, is a subsidized merchant which visits Boughene, Uakye, Knorbes, Roup, and Feri on a regular basis (the ship carried additional tankage in its cargo hold, allowing it to cross jump-2 distances with jump-1 drives. The lower deck of the vessel is flooded and underwater. The upper deck has about 30 cm of water sloshing about, and water damage to electronics and control circuits is excessive.

Rumor: The ship's computer contains a record of the ship's flight.

Fact: The ship crashed because of the failure of a control interface. All five crew members were killed in the landing.

AG FACTORY

The Ag Factory is an automated production center which is devoted to growing a variety of grains and vegetables for local consumption. The entire operation is run by fewer than five persons in an extremely complex control center.

Rumor: One of the staff at the factory comments in passing that the Ag Factory is producing large quantities of food, but casualties from the plague have reduced demand. No one is going to earn their bonuses this year.

Fact: The night controller has cooked up a plan to make some money from this plague. He has sent a ransom demand to the police department. The ransom demands, untraceably sent by computer, call for the ransom to be placed in a drone at the Ag Factory and then sent west over the ocean. The Ag Factory has both the money and the drone on hand; someone at the factory will have to prepare it. The police expect that the drone will be intercepted by an air/raft, or perhaps diverted by a radio signal. In either case, there is a good chance that the extortionist will get away with the money.

Actually, the night controller expects to switch a false load for the money when it is placed in the drone. He will then hide the money and get away with it later. The group, when visiting the Ag Factory, will find everyone friendly and open, but unable to provide any real information. The night controller has no real knowledge of the source or cause of the plague.

STAGING POINT

Staging Point was established as a stopover for travellers ranging across the surface of Uakye. The small station has a restaurant, a vehicle repair station, a communication beacon, and a small store. The station is operated by a husband-wife couple and their three children. Questioning them can give a good idea of who has passed through recently, and of any interesting events.

Rumor: The Zhodani casualty remains recovery team was through here several weeks ago. The people here think that the Zhodani are responsible for the plague.

Rumor: The weekly courier between IGS and Uakye City hasn't been through on his regular run. In fact, he hasn't been back from Uakye City, and the family worries that he came down with the plague. His name is Lars Intron.

HUNTING GROUNDS

The forests of Uakye are home to the redbacked slonth—the Baron's goal on his hunt. Terrain types in the hunting grounds are Forest, Swamp, and Beach. Terrain encounter tables are provided for each of the terrain types. The hunting grounds have no important information for the characters. No evidence of the plague is present in the wild.

CITY INDUSTRIAL PARK

The industrial park is the site of several small factories—most sprang up to deal with war production needs of the Imperium, but they are now winding down as their contracts expire. Consequently, only a few workers are here and their future looks bleak.

One temporary bright spot is Triple VVV Vacc Suit Corporation, which has been hiring workers lately to help produce stripped-down vacc suits for local sale: the suits serve as quarantine suits to protect Uakyeans against catching the plague.

Rumor: Some unemployed workers are saying that Triple VVV is run by a truly unfeeling, greedy person who devised this plague himself just to sell a surplus stock of vacc suits and make a quick credit.

Fact: A new employee of the company is Tanissa Levant, in charge of quality testing; he has been on the job only a few weeks. In response to direct questions, Levant admits that he was formerly head of the IGS lab, but left because his contract ran out. He also says says that he knew about a similar plague being developed by IGS but that he is certain that the Uakye plague can't be the same one—he always insisted on extreme safety measures while he was director.

RESIDENCES

The residential area of the city is filled with houses and apartment blocks. Because of plague fears, no one is allowing visitors or callers.

UAKYE DOWN STARPORT

The starport has been closed to traffic since the nature of the plague became apparent. No traffic has been allowed to or from the planetary surface.

Rumor: There was a strange incident recently: a ship landed out in the Shallows rather than here at the starport. One fellow believes that it was Zhodani saboteurs; another thinks that it was smugglers.

Fact: There is no record of a shipment passing through the starport from IGS to Efate. The clerk knows Lars Intron, and expected him with the package (Intron comes through regularly, once per week) but he never showed up. That was just before the plague started, he thinks.

STARTOWN

The people at Startown are especially troubled by the plague. With the starport closed, there is little in the way of new business, and the old hands are running out of money. The only jobs to be had are clearing the dead out of rooms—a job likely to give the plague to the workers.

Fact: Cleaning up the plague dead is one of the few jobs open at the moment; some people won't take the job for fear of catching the plague, but others take the job because they need the money. One Startown resident, Vern Atloi, says he has always done this sort of job. When a hotel needs a body removed, they call him (they paid Cr100 per job before the plague, but now the price has gone down to about Cr50 per job). He remembers just before the plague started, he and another man cleaned out a room in the Uakye Regent Hotel of a man who had been dead a few days. Atloi's partner has since died of the plague. Atloi thinks about this for a moment after mentioning it to the characters, and then comments that his partner was one of the first to catch the deadly disease.

POLICE HEADQUARTERS

The police are overwhelmed by the plague; several of their enforcers have fallen to its effects. They are overworked and undermanned. The police chief appears distracted (perhaps showing the first signs of plague himself).

The chief of police is unable to provide any help because of his lack of resources, but he does suggest that there might be some equipment available at the Imperial Army Base.

Rumor: An enforcer going off duty is heard to say that he thinks this is a Zhodani plot, because Zhodani troops have uses biological agents before.

Fact: The police chief says that he has received a ransom note that calls for Cr1,000,000 in return for the formula for an antidote and vaccine. The authorities are checking on its authenticity. He should know more in a few days.

The next time the group calls on the police, they can learn that the ransom note appears to be authentic, and preparation are being made to pay the ransom.

COMMERCIAL CENTER

The stores of Uakye City are located in the commercial center of the city. Equipment at law level 8 or less and tech level D or less can be purchased in the stores here. Prices are 10% above base price. Vacc suits and protective suits are priced at 200% of base price. A locally-produced protective suit is available for Cr1,000.

ABANDONED MILITARY BASE

The Imperial Army Base has been scheduled for inactivation; there are no troops assigned to it now, other than a handful of guards responsible for the equipment left behind. The officer of the guard can provide the group with an Imperial GCarrier for use as transportation on Uakye. The guard officer must react at least 8+, or he will not cooperate. There are 300 GCarriers parked in the motor pool; a vehicle can be stolen if necessary. If the officer of the guard is asked, he can also provide bio-protection suits which may protect against the plague.

Rumor: Two of the guards can be overheard talking about the plague: they wear Imperial bio-protection suits when they have to go into town.

HOTEL COMPLEX

The Uakye Regent Hotel is one of several hotels in Uakye City. Since the plague, it is the only one remaining open. One of the others was burned to the ground in an attempt to clear out plague contamination.

Rumor: There was a Zhodani group through the city some weeks ago—recovering remains of Zhodani war casualties. They are the ones responsible for this plague—either they left the plague behind, or they tripped a booby trap while recovering bodies.

Fact: If a clerk is asked about Lars Intron (the request must specify Lars Intron by name), the clerk can check the files and find that Intron was registered here, and found dead of the plague in his room. The room itself was cleaned up and Intron's luggage was put in storage. Once found, Intron's luggage includes a parcel addressed the Chemical Warfare Section, Imperial Naval Base, Efate. The parcel contains a ruptured sample container of the biological agent, which has leaked out.

MEDICAL CENTER

The medical center in Uakye City is under tremendous pressure—treating plague victims, searching for a cure, and trying to develope effective treatments until a cure is found. The staff is very cooperative and appreciates the efforts of the group to find the reason that the plague has hit Uakye.

Rumor: The medical staff was originally puzzled by the rapid appearance of the plague. They now have several theories. It could be a genetically manipulated virus (accidentally or deliberately set loose), it could be Zhodani biological warfare, or it could be a natural disease (native to Uakye, or from another world).

Fact: The first victim of the plague was Lars Intron. He was found in a hotel in the city, but has not yet been identified by occupation or residence.

VICTORY

"Winning" the adventure (in tournament terms) depends on properly figuring out the correct explanation for the plague.

GRAND SURVEY WORLD PROFILE

World Name:	Uakye/Regina/Spinward Marches
Location:	Spinward Marches 1805
UPP:	B439598-D

Physical Data:

Diameter:	4,100 km
Density:	1.04 standard
Mass:	0.13 standard
Surface Gravity:	0.52 g
Rotation Period:	Tidal lock
Orbital Period:	6.3 days
Seasons:	None
Axial Tilt:	n/a
Orbital Eccentricity:	0.0
Satellites:	1 moon, Uska
Surface Atm Pressure:	0.18 atm
Atm Composition:	Standard oxygen-nitrogen mix
Atm Terraforming:	Yes
Hyd Percentage:	93%
Hyd Composition:	Standard oxygen-nitrogen mix
Hyd Terraforming:	Yes

Temperature:

Base Surface Temp:	18.6°C (twilight zone)
Axial Tilt Modifiers:	n/a
Rotation Modifiers:	+233°C, -145°C
Latitude Modifiers:	±46°C per hex row
Orbital Eccentricity:	±0.0
Other modifiers:	None
Weather Control:	No
Grnhouse Terraforming:	Yes
Albedo Terraforming:	Yes

Mapping Data:

Nbr Tectonic Plates:	7
Native Life:	No
Terrain Terraforming:	Yes
Major Continents:	Archipelagoes only
Minor Continents:	Archipelagoes only
Major Oceans:	World
Minor Oceans:	World

Seismic Data:

Stress Factor:	3
Notable Volcanoes:	Korowa

Resources:

Natural Resources:	Ores
Processed Resources:	None
Manufactured Products:	Weapons, Heavy Equipment, Electronics, Gravitics

Population & Ports:

World Population:	34,100
Primary Cities:	Uakye City; 32,500; class B
Secondary Cities:	None
Tertiary Cities:	Zed (orbital); 1,300; class B

GRAND CENSUS CULTURAL PROFILE

World Name:	Uakye/Regina/Spinward Marches
Location:	Spinward Marches 1805
UPP:	B439598-D

Cultural Profile:

Progressiveness-Att:	Progressive
Progressiveness-Act:	Advancing
Aggressiveness-Att:	Unaggressive
Aggressiveness-Act:	Peaceable
Global Exent:	Monolithic
Interstellar Exent:	Friendly

Technology Profile:

High Common:	13
Low Common:	13
Energy:	13
Computers/Robotics:	15
Communications:	15
Medical:	15
Environment:	14
Land Transport:	13
Water Transport:	13
Air Transport:	13
Space Transport:	15
Personal Weapons:	13
Heavy Weapons:	13

Government Division of Authority: The government of Uakye is divided almost evenly between the judicial, executive, and legislative bodies, with the judicial having a slight priority over the other two branches. The judicial function is relegated to a system of hierarchical courts, having regional jurisdictions over various laws. The judges in these courts are selected by a civil service system, and must be recertified every three years. Countess Parasii, an Imperial noble, is the sole executive. Her troops, serving in a civilian capacity as law enforcement officers, are generally regarded as being even-handed and efficient. Laws are made by a variety of administrative councils, each having jurisdiction over a certain aspect of life. These legislators are also chosen by the civil service system; any citizen is eligible to attempt to gain a position.

Local Customs:

Marriage required for certain age groups: In an effort to increase Uakye's population, the government requires widows and widowers between the ages of 20 and 30 to remarry within a year. Divorces are not allowed between these age limits.

Unusual leisure/recreation: Directly north of Uakye City is an area of ocean known as the Shallows, because of its consistent depth of about one meter, covering about 40,000 square kilometers. Every two years, the "Race to the Depths" pits the hardiest Uakyeans against each other as teams of four citizens compete in an "overland" trek. Starting from Uakye City, each team must travel, on foot, 220 kilometers due north to reach the edge of the Shallows, where the continental shelf suddenly drops off. The winning team (or team member, in case of casualties from drowning or attacking ocean life), is awarded a cash prize of Cr50,000; the potential income from commercial endorsements is valued at about five times that amount.

FOREST Terrain **Uakye 0205 B439598-D**

Die	Qty	Animal Type	Weight	Hits	Armor	Wounds & Weapons		Reactions		
2	5	Carrion-eater	100kg	13/6	none	8	claws	A7	F8	S3
3	5	Hunter	100kg	21/2	none	8	teeth	A2	F3	S1
4	7	Flying Hijacker	400kg	23/12	none	15	claws and teeth	A2	F6	S1
5	1	Eater	800kg	26/9	none	19	thrasher	A4	F5	S1
6	1	Flying Intermittent	200kg	22/8	none	13	hooves and teeth	F6	A7	S1
7	1	Filter	3200kg	32/13	none	28	hooves and teeth	F4	A0	S1
8	1	Filter	400kg	21/15	none	19	horns and hooves	F6	A0	S0
9	1	Siren	12kg	6/10	none	8	thrasher	A0	F5	S0
10	Event—Giant Camouflaged Filter. The characters are surprised by a giant filter at close range:									
	1	Filter	16,000kg	30/6	mesh	6	teeth	A0	F0	S0
11	1	Pouncer	200kg	21/12	none	11	teeth	A5	F7	S2
12	1	Killer	25kg	6/6	jack	8	claws+1	A3	F9	S1

BEACH Terrain **Uakye 0205 B439598-D**

Die	Qty	Animal Type	Weight	Hits	Armor	Wounds & Weapons		Reactions		
2	9	Flying Intimidat	1kg	3/0	none	1	teeth	A5	F6	S2
3	1	Flying Gatherer	6kg	1/10	none	1	claws	A4	F4	S1
4	13	Amphib Reducer	400kg	23/12	none	17	thrasher	A7	F4	S1
5	1	Hunter	25kg	9/7	none	5	teeth	A6	F7	S1
6	7	Grazer	800kg	22/14	none	20	hooves and teeth	F1	A8	S2
7	17	Grazer	25kg	12/6	jack	10	hooves and teeth	F0	A5	S2
8	9	Grazer	3200kg	25/19	none	18	claws and teeth	F2	A7	S4
9	1	Siren	400kg	23/13	none	12	teeth+1	A0	F4	S1
10	Event—Tidal Pool. Tidal pools are contaminated with heavy metal concentrations. Bathing in, drinking, or wading through the water will cause illness for 1 to 6 days.									
11	1	Siren	50kg	11/8	jack	8	stinger	A0	F4	S0
12	2	Chaser	6000kg	34/14	mesh	16	claws+1, teeth+1	A0	F9	S2

SWAMP Terrain **Uakye 0205 B439598-D**

Die	Qty	Animal Type	Weight	Hits	Armor	Wounds & Weapons		Reactions		
2	6	Amphib Carrion-eater	44000kg	72/37	jack	54	thrasher	A6	F7	S1
3	1	Hunter	400kg	22/10	none	11	claws	A1	F5	S1
4	3	Hijacker	800kg	22/7	none	21	hooves	A7	F7	S1
5	1	Gatherer	200kg	22/13	none	11	teeth	A6	F4	S1
6	1	Intermittent	800kg	32/10	none	21	horns and teeth	F5	A7	S1
7	1	Intermittent	200kg	17/13	none	17	hooves	F9	A4	S1
8	5	Grazer	3200kg	26/13	none	25	horns and hooves	F2	A5	S4
9	1	Chaser	6000kg	38/6	none	8	claws+1, teeth+1	A0	F6	S2
10	Event—Quicksand. Randomly select one of the characters to roll the following task:									

To avoid being trapped in quicksand:
DIFFICULT, survival, dex (fateful)
REFEREE: If this task fails, the character has become trapped. Once trapped, roll the next task.

To escape from quicksand:
DIFFICULT, str, dex
REFEREE: Other party members may attempt to help (by extending a rope, a branch, etc.), and may use their characteristics as DMs on this task as well. This task is hazardous: if any mishap occurs, one of the characters who was aiding in the escape has also been caught. If no other characters were helping, ignore any mishaps.

11	1	Flying Siren	50kg	15/5	none	10	claws and teeth	A0	F5	S2
12	1	Chaser	2400kg	4/2	none	2	stinger	A0	F7	S4

HUNTING ANIMALS

The concept of hunting encompasses any pursuit of animals for pleasure or for survival. Hunting does not necessitate the killing of prey; pictures or recordings are equally accepted as a final goal.

Hunting can be divided into three areas of endeavor:

Detection is the ability to determine the presence or recent passage of the particular quarry, and to identify it by its tracks, spoor, or habitat.

Stalking involves the actual tracking of a quarry. Two specific aspects of stalking are stealth and determination. Lack of stealth can prematurely reveal the hunter to the prey and prevent the final conquest; lack of determination can cause the hunt to be given up too soon.

Conquest is the final goal of hunting. Traditionally, the ultimate goal of hunting is to kill the prey. This has changed through the years to encompass three distinct types of goals: killing (for trophies or food), recording (as sounds, images, or both), and coup (where contact with the animal—without killing it and without the hunter sustaining injury—is sufficient).

Individuals make their own decisions as to the type of hunting they prefer to undertake. Survival situations call for hunting animals and killing them for food. Some quests call for finding animals and either capturing them or recording them for scientific analysis (or for the reward that scientists will pay so that they can perform the scientific analysis).

The Referee's Responsibilities

When administering hunting encounters, you should be aware of individual characters' goals as well as probable actions by the animals. In order to make a hunting encounter work, you can (and should) take the role of the animal in the hunt.

For dull or unintelligent animals, playing the role merely calls for the animal to move about its territory; it remains the player's responsibility to detect, stalk, and conquer the beast. For cleverer animals, you can lend your own intellect to the contest, taking on an adversarial role and making the animal detect, stalk, and try to conquer the hunters in turn.

The basic rules of combat apply whenever animals and hunters meet. You must handle the detection and stalking in such a way that the situation is both realistic and enjoyable for the players. The following are a few guidelines for you to follow:

1. Territory. Most animals have a territory. You should establish the size and configuration of the territory before the hunt begins. Large animals have relatively large territories, while small animals claim quite small areas. Within its own territory, the animal has an advantage, being familiar with the terrain, with possible hiding places, with dangerous areas, and with the location of food and water. Outside its own territory, an animal is less secure, being unfamiliar with the details of the area. Animals rarely leave their territory unless they are forced. Territories are primarily claimed to exclude other animals of the same species (but not of the same clan, herd, pride, or group). Animals of other species are usually allowed access to the area, provided they do not compete for the same food.

Territories vary in size, but a rough approximation would allow one square kilometer for each kilogram of body weight for the animal. Thus, a 100 kilogram pouncer would have a territory of 100 square kilometers, or about 10 kilometers by 10 kilometers. For flying animals, multiply their territory by 10. Some animals migrate, and when this occurs, they change their territory. Similarly, occasionally an animal will seek out a new territory—young leaving the nest, forced migration due to climate or disaster—and do not yet have an established territory.

2. Lair. Somewhere in the territory is the animal's home, den, lair, or nest. This protected place is the home base for the animal, and where it goes when wounded. It is also the location of any young or eggs (and if the animal is a gatherer, items which it has gathered or accumulated). Trappers will have their trap in their lair.

A hunter who knows where an animal's lair is can assume that it will return to it eventually. On the other hand, animals tend to defend their lair with greater ferocity than when otherwise encountered. For some animals (grazers, for example), the lair is a movable location occupied by the herd. As a result, individual grazers may separate from the herd, but regard the herd's location as home, rather than any specific physical location.

3. Purpose. Animals always have purpose in what they do. Rather than simply wandering aimlessly around within their territory, they are performing some task. They may be finding food or water (some animals may seek out more unusual nutrients, such as salt licks or minerals, or they may need sunlight, shade, heat, or some other special condition). They may be marking their territory to warn off rivals of their species, they may be instructing their young, or they may even be playing, but there is some purpose to the activity. The referee can often have a greater insight into how the animal will react if it is first established what the animal is doing.

Hunting Tasks

Normal animal encounters are random meetings reflective of the animal population of an area. Hunts are different in that they are deliberate activities to seek out and conquer a specific animal type. As such, the procedure for a hunt differs from that of an ordinary animal encounter.

Detection: For a hunt to begin, the characters must know (at least roughly) the type of quarry they seek, and they must be prepared to work to find it. A hunt may be organized and deliberately set out to detect an animal type, or it may be casual, actually beginning once the animal is detected. Detection of an animal is most possible if it is listed in the animal encounter table for the area involved. At the referee's option, other animals (specifically being hunted, and reasonably resident in the area) not contained on the animal encounter tables may also be detected.

To detect tracks or other signs of an animal:
DIFFICULT, hunting, recon, 5 min
REFEREE: Throw once per person in the group. Once a track or other sign has been detected, throw 2D and consult the animal encounter table to determine the type of animal tracks. Do not yet tell the players what type of animal they have detected—for that they must roll:

To identify the type of animal that has been detected:
ROUTINE, hunting, int (uncertain, non-repeatable)
REFEREE: Throw only once for the group to represent their consensus opinion. The detection event may be re-rolled if the animal that has been detected is not the one being sought.

Stalking: Stalking a detected animal is possible for as long as tracks or some other sign remains available.

To stalk a detected animal:
DIFFICULT, hunting, recon, 15 min (uncertain)
REFEREE: As long as the speed of the animal being tracked is 1 or 2, this task is DIFFICULT. If the speed of the animal is 3 or 4, make this task FORMIDABLE.
If a mishap occurs, the tracks are lost.
If the result of this task is total truth, the animal being tracked has been found.

Flying animals cannot be tracked; they must be actually located or observed, or met by chance. They may be ambushed.
Swimming animals cannot be tracked. In rivers, the group may move up or downstream in hopes of encountering them. Ambushes may be possible.
Animals with speed 0 are encountered if they are detected.
Some animals, especially large carnivores, may turn and stalk their hunters, perhaps before the hunters have detected or encountered the animal, or perhaps after being encountered and fleeing. The referee may institute such a situation and administer especially cunning animals in their own hunts.

Conquering: Animals which are encountered after stalking are then the subject of animal encounters. The standard procedure is followed to determine which side has surprise, and to determine range (see the chapter on encounters). Combat proceeds normally. It is possible for the animal to have surprise for combat.
If the goal of the hunter is to record the animal with cameras or recorders, then the animal must not flee (allowing time for the imaging or recording process); it must remain for at least one minute or the imaging process is unsuccessful, and stalking must continue.

Additional Hunting Tasks
Tracking: Once an animal has been encountered, and has fled, the hunters may track it. The animal will move at typical speed, and so any speed above 1 will be faster than humans. Tracking may be accomplished in vehicles if available. An animal fleeing an encounter will head for its lair; it will rarely leave its territory. Animals in their lair will attack to protect their young or if cornered there.

To track an animal that has been encountered, using a vehicle:
DIFFICULT, hunting, vehicle skill, 5 min
REFEREE: If the speed of the animal being tracked is 1 , this task becomes ROUTINE. If the speed of the animal is 3 or 4, make this task FORMIDABLE.
If any mishap occurs, the animal is lost.

To track an animal that has been encountered, on foot:
DIFFICULT, hunting, vehicle skill, 5 min
REFEREE: This task is only possible if the animal is speed 1. If the animal is speed 2 or more, this task is impossible.
If any mishap occurs, the animal is lost.

Ambush: In some cases, animals cannot be stalked, and must be ambushed instead. Duck hunting on Terra is an example of an ambush. The hunters find a likely location, either along a route used by the quarry, or near where they feed, and wait.

To locate a good ambush location:
ROUTINE, hunting, int, 5 min

To successfully ambush an animal:
FORMIDABLE, hunting, recon, 1 hour
REFEREE: If ambushing flyers, make this task one level less difficult. If decoys or specialized calls are employed, make this task one level less difficult. Once an ambush has been sprung, it will be avoided by the animals for at least the rest of the day.¤

Apge	Perite	Ameros	Shinkan
Sanches	Mekee	Core	Kaskii
Bunkeria	Cemplas	Chant	Dingtra
Cadion	Ch'naar	Dunea	Saregon

Core: Subsector Key

Library Data of the Core Sector

Airplant: One of a terraformer's best tools is a lichen native to Saandeth (1232 B130563-D) in Core Sector. Because of this purplish-black, spreading plant, very small desert worlds may have their atmosphere altered to become a thin but breathable atmosphere of nearly 100% oxygen.

Oxygen is frequently present in the soil of barren worlds, locked in chemical compounds. The airplant absorbs large quantities of solar energy, including ultraviolet and gamma rays, which power its enzyme systems and break the bonds of these compounds. If the planet's gravity is strong enough to hold the liberated oxygen near the surface, a light but adequate atmosphere builds up over the centuries.

To speed the terraforming process after introducing the plants, domed areas may be constructed to hold the oxygen in higher concentrations, allowing human settlement that much sooner. The smallest worlds rarely hold hydrogen in their formation, so water is still non-existent in such places. But hydrogen can be brought in and burned in fuel cells, producing both energy and water for a colony.

On its home world, airplant is part of a small eco-system of bacteria and lichens which requires almost no water and derives what it needs from the breakdown of minerals. The population of Saandeth is clustered into a few dense population centers, leaving most of the surface undisturbed.

Anther/Chant (2021 A300697-E): Anther's government is another inefficient bureaucracy, but the world's landscape is an attractive one. Tall towers shoot up from the ground, and then at heights anywhere from 30 to 100 meters up they spread out like like mushrooms, drooping down toward the ground. Over time, the structures even-tually do reach the ground, forming an enclosed dome under which terraforming can be performed.

On some towers, several domes spread out from different levels, creating concentric circles on the ground. Different areas of a complex can thus be used for different purposes, with farming in one, manufacturing in another, and recreation in a third. Since livable ground under the domes are precious, many inhabitants still live in the towers themselves, or in the attached "ceilings" of the domes.

Bellham/Dunea (1838 D989620-7): The inhabitants of Bellham (which some Solomani call Bedlam) are the only humans of the Imperium who intuitively understand the K'kree herd instinct, because their planetary culture allows no privacy at all. A desire to be alone for any purpose whatsoever is looked on as pathological.

The climate is subtropical year-round in the settled areas, which encourages the free-style architecture, without walls or doors, which the inhabitants prefer. Visitors naturally find this very trying and usually retreat to their ships when they wish to have privacy. But even stranger than the absence of walls and doors in the architecture is the absence of discretion in speech. Bellhamites are taught from birth to say anything and everything that they are thinking or feeling. Not only is a gathering of Bellhamites caco-phonous, but tact is virtually unknown.

This culture has not made Bellhamites popular away from their own world, either, but they care very little about that. Few Bellhamites understand the concept of tact. Apparently conditioned by the barrage from their fellow citizens, Bellhamites seem to have very "thick skins" and often fail to notice other people's hurt feelings.

The tech level of Bellham has been steadily decreasing since it was first catalogued. Some researchers maintain that privacy is a necessity for creative thought and warn that Bellham will continue to go downhill if a new cultural influence does not gain ascendancy.

Referee: This is a splendid homeworld for a truly obnoxious NPC. Even players might like to give it a try.

Bogustin/Cemplas (1323 A3105AC-F): Vincent V'cabi was hired in 958 by Harton Corporation to head up a colony on Bogustin. The colonists built a giant orbital complex, and spends much of its time in a total terraforming project to make the world itself inhabitable. Forty years after the colony was founded, Harton went bankrupt, and V'cabi proclaimed himself as V'cabi I. Now 198 years old, thanks to anagathics and good Vilani bloodlines, and still rules the world. His doting population is gearing up for the bicentennial celebration of the government. Bogustin Studios is well-known for its fine holographic entertainment programs, many of which are computer generated.

Celetron/Cemplas (0922 A375000-F): The Imperial Naval Base at Celetron is hard at work on a self-aware starship project. While only a ground-based prototype has been produced, the project's technicians are hopeful that an independently intelligent interstellar vehicle will be produced by the end of this century; partial applications of the technology, such as safer navigation and more accurate ship-to-ship combat, should come much sooner.

Celetron has no inhabitants other than Navy personnel.

Chanestin Kingdom: One important rival to the Sylean Federation (which later became the Third Imperium) was the Chanestin Kingdom of Dunea subsector. Originating on Keshi, the militaristic empire of the Chanestin dynasty extended a feudal rule over some twenty-five star systems within a five-parsec radius. The Keshi conquests began when technology declined on Keshi's neighboring planets while Keshi retained jumpdrive. The Chanestins were careful to consolidate each new planetary takeover before moving on, so the core of their pocket empire proved a solid base for new expeditions.

Once established, rule by the Chanestins was not particularly harsh, except in the suppression of uprisings. Sylean trader-emissaries, however, arriving in -107, received very short shrift when they spoke of the growing Federation, bound together by economic self-interest and mutual defense. The summary execution of these "spies" brought the Syleans in force against the Chanestin systems when a much more peaceable meeting could have been arranged in the absence of such paranoia.

War lasted well into Cleon's reign and was a chief reason for the defensive architecture of the first Imperial palace.

Ekal/Dunea (2040 A240745-A): Ekal is a nice place to live if your doctor has recommended a dry climate. Its cities are founded where wells can be drilled successfully, but there are oases in the desert for those who choose to stay away from other people. Strict water conservation and recycling are the most sternly enforced laws.

Other than that, Ekal is rather free-wheeling. Many people carry weapons openly but rarely need them except to defend against desert animals. Violent crime is low. The culture is strictly, even militantly, egalitarian. Anyone is considered as good as anyone else, even if he isn't. This rather unrealistic approach to ability may have something to do with Ekal being lower in technology than its neighbors.

Even high government officials can be approached by any voter who wants to speak to them. When Imperial nobles visit here they do not fare too well if they stand on their dignity. Nobility is a null word to Ekalans, so a few

Cadion Subsector

Cadion subsector (subsector M of Core Sector), named for its brightest star, is also the astrographic "center" of the Imperium and home of the world Reference.

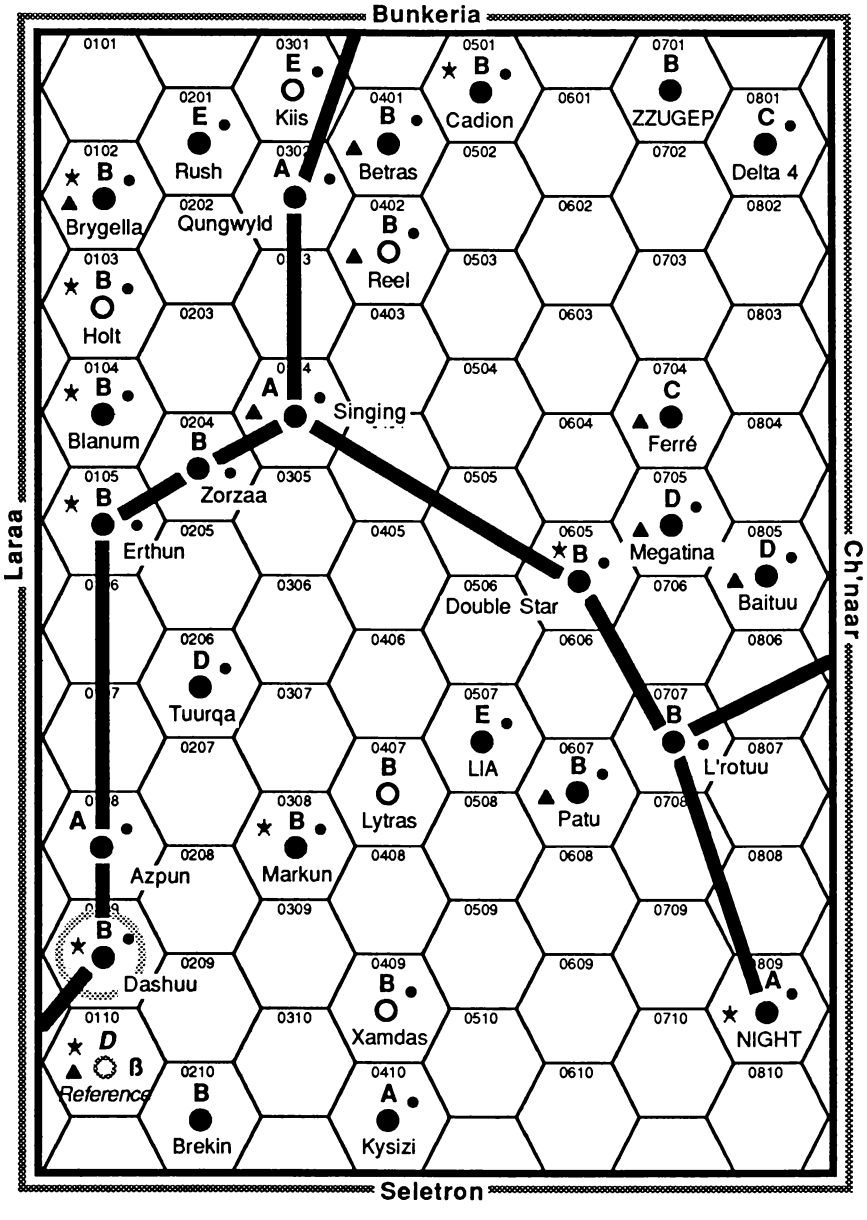
While Brygella has only a small permanent population, its prestigious School of Oceanography boasts more than 4,000 students, despite exacting admissions standards. The entire campus is underwater, of course, and many lab sessions are held "outside", swimming through the depths.

Dashuu, another water world, exports musical programs entirely composed by high-tech computers. The income from these recordings is sufficient for the handful of inhabitants on the planet.

Reel is deep in the throes of an extensive hydrospheric terraforming project, in an attempt to provide sufficient water for agriculture. The effort is funded by Naasirka, the Imperial megacorporation.

Name	*Location*	*UPP*	*Bases*	*Remarks*	
Brygella	0102	B76A200-E	A	Low Pop. NonInd. Water World.	G
Holt	0103	B8D7346-C	N	Low Pop. NonInd. Fluid Hydrosphere.	G
Blanum	0104	B421677-B	N	NonAg. NonInd. Poor.	G
Erthun	0105	B667587-C	N	Agricultural. NonInd.	G
Azpun	0108	A873000-A		Low Pop. NonInd. Barren.	G
Dashuu	0109	B87A120-D	N	Low Pop. NonInd. Water World.	A G
Reference	0110	D100100-B	A	Low Pop. NonInd. Vacuum. Research Station.	
Rush	0201	E869372-6		Low Pop. NonInd.	G
Zorzaa	0204	B667420-C		NonInd.	G
Tuurqa	0206	D671443-9		NonInd.	G
Brekin	0210	B58748C-A		NonInd.	
Kiis	0301	E10059C-7		NonInd. Vacuum World.	G
Qungwyld	0302	A655561-A		Agricultural. NonInd. Owned by Singing.	G
Singing	0304	A9A9310-C	S	Low Pop. NonInd. Fluid Hydrosphere.	G
Markun	0308	B887136-9	A	Low Pop. NonInd.	
Betras	0401	B634320-B	S	Low Pop. NonInd.	G
Reel	0402	B150779-E	S	Poor. Desert World.	G
Lytras	0407	B400643-A		NonAg. NonInd. Vacuum World.	G
Xamdas	0409	B110100-C		Low Pop. NonInd.	G
Kysizi	0410	A53A777-E		Water World.	G
Cadion	0501	B655264-A	N	Low Pop. NonInd. Military Rule.	
Lia	0507	E654988-A		High Pop.	G
Double Star	0605	B642652-A	N	NonInd. Poor.	G
Patu	0607	B796676-7	S	Agricultural. NonInd.	G
Zzugep	0701	B4539CD-C		High Pop. Poor.	
Ferré	0704	C797778-5	S	Agricultural.	
Megatina	0705	D584475-4	S	NonInd.	G
L'rotuu	0707	B898674-8		Agricultural. NonInd.	G
Delta 4	0801	C549449-B		NonInd.	G
Baituu	0805	D438110-6	S	Low Pop. NonInd.	G
Night	0809	A5749C9-F	N	High Pop. Industrial. Subsector Capital.	

The Cadion subsector contains 31 worlds with a total population of 16.806 billion. The highest population is 9.2 billion at Zzugep; the highest tech level is F at Night. All worlds are members of the Imperium.



Cadion Subsector

Subsector M of the Core Sector

dukes and barons have come away very offended. On the other hand, it's a great place to vacation incognito.

Ekal's years are short (180 standard days); elections are held every year. Government policy is thus a bit chaotic, but if it's bad now, it will change. Young people can vote when they reach puberty; no other voter qualifications need be met except world residency. There have been no cases of political violence since this system came into use. Why use a gun when it's so easy to "throw the bums out" legally?

There is little in the way of material trade from a world this poor in resources, but some off-world capital comes from safaris, which have become a popular high-class pastime in the subsector. Chief target of these safaris is the dunvic or "sandlion", a 100 kilogram predator that is nearly invisible against the sand if viewed from more than 50 meters. Just finding one to shoot is much of the challenge, and by then the hunters are often within range of the animal's charge.

Gandar/Ch'naar (1633 B300666-D): Gandar is the moon of the only gas giant in this small system. There are no other habitable planets, and this one is no prize either. The Salo Merchant Line from Zimmel/Dunea (1733, one jump away) colonized Gandar as a fueling station, since its low orbit makes it an ideal jump off point for skimming the gas giant and storing refined fuel. The Zimmel government eventually took over management of the station and helped make it into a self-sufficient colony, trading fuel and some refined minerals for other needed items.

Hiilev/Ch'naar (1635 C62757B-A): Hiilev was colonized in two vastly separated periods. Early in the First Imperium, colonists settled in the lowest valleys they could find. Over several thousand years of living on Hiilev, they adapted to the planet in some unique ways, including strict breeding laws. Today the descendants of these early colonists are barrel-chested and leather-skinned, with large ears and small, dark eyes. Their blood carries an extraordinary amount of hemoglobin and their skin is rich in melanin. Calling themselves Hiidamo, they have virtually forgotten that they were ever strangers to the planet.

After the First Survey in 420, newcomers were attracted to Hiilev by the biological wealth in its oceans. But these settlers were standard humans, using technical equipment to survive in the very thin atmosphere. Many new colonists felt the Hiidamo were odd freaks. Their attitude was subtle at first, but ultimately degraded into outright racial war.

It took many deaths to see that the races just could not settle their differences, and could not live together. The Hiidamo claimed one major continent, leaving the newcomers the other continent. The two races have little contact; they do not trade or otherwise deal with each other. Even this has not entirely stopped the killing, but it has been reduced to one-at-a-time murders rather than running battles.

Hudmill/Ch'naar (0933 B88A104-B): Naval and Scout facilities are split between orbital bases around Hudmill and a few low-lying islands in the temperate zone of Hudmill's surface. The few permanent residents are mostly retired officers and their families who decided to occupy one of the islands the Navy wasn't using. Climate and lifestyle here are reminiscent of Polynesia on Terra, but civilian offworlders are not encouraged to stay.

Mirror/Ch'naar (1437 B9A8311-9): Mirror, owned by Ling Standard Products, derives its name from the mirage-creating effects of the atmosphere—which is rich in hydrogen sulfide, as is the ocean. Purified sulfur is a major export of the planet. Indeed, the processes used to extract the sulfur leave behind water, so that the planet is gradually becoming more livable by being commercially exploited.

Okefir/Ch'naar (1035 B581666-A): Both Okefir and its neighbor Vala (1034 C533762-6) have been owned by Aursis since their colonization in 57. Vala remains somewhat backward and dependent on Aursan technology, but Okefir has begun to progress; a rebellion has been stirring there for about 30 years. Laws imposed by Aursis have become progressively more stringent; some efforts have been made to lure or force the best minds of the planet away.

Referee: The Scout base on Okefir is not permitted to interfere, but if an Imperial noble could be interested in the situation, Aursis might be talked into a more conciliatory stance and serious bloodshed averted. In the absence of any outside help, analysts predict a protracted guerilla war which even Aursis' high technology might not be able to win. Aursan troops are not well adapted to back-country fighting on a near-desert world like Okefir, which has an atmosphere four times as thick as what the Aursans are accustomed to.

Plague of Duskir: Ravaging worlds from the Solomani Rim to Vland during the Rule of Man, the Plague of Duskir followed in the wake of conquering Solomani troops.

The biological history of the Vilani settlers, who evolved on a world of alien biology, ill-prepared them for contact with other human races. Minor plagues had of course broken out in many of their previous contacts, but the most serious of these outbreaks stemmed from the Solomani, who carried germs that had attacked humans for millenia.

Neither the Vilani immune systems nor their pharmaceutical stocks were ready for what happened. The plague of Duskir was no single disease, but rather a complex infection by several organisms normally harmless to Solomani (or at least easily controlled). The most common pattern of infection involved two varieties of yeast, staphylococci, digestive bacteria, and venereal diseases.

Ironically, the plague is named for the Vilani doctor who first analyzed its cause and treated it correctly, although some wrongly believed that the Vilani started the plague. With the help of Solomani medical texts and the facilities of Dishadshi University, Duskir brought the diseases under control, first on his own planet and then on many more.

Today, human stock has so intermixed and travel is so widespread that such bacteriological disasters are rare. The lessons learned from such epidemics have taught Imperials how to contact minor human races without wiping them out unintentionally.

Velpare/Cemplas (1623 A567634-9): Velpare is known throughout Core Sector for its fine cuisine. The chefs of the world cook up a variety of delicacies, all prepared from the native plant and animal life. One spice in particular, the varinte plant, is highly prized for its sweet, pungent flavor, and can be bought as far away as Vland.

Velpare is the subsector capital; the Count of Frethe, an influential noble in the Moot, holding thousands of proxy votes, hails from here.

The Scout base in the Velpare system is small, but is an important node in the X-boat network, overseeing operations in a five-parsec radius.

Ye-Lu/Cemplas (1123 A100134-G): Navy scientists at Ye-Lu are particularly proud of their accomplishments: the Ye-Lu starport is operated by the Imperial Navy as a research project, testing the limits of robotic networking. The entire corps of robots at the facility is tied together into one gigantic master/slave network; theoretically, the entire starport is "one" robot, with only "one" brain, but the brain is dispersed throughout the complex. All communication between the robots is handled by portable meson communicators, another important experimental device developed by the Imperial Navy at Ye-Lu.¤

Chant Subsector

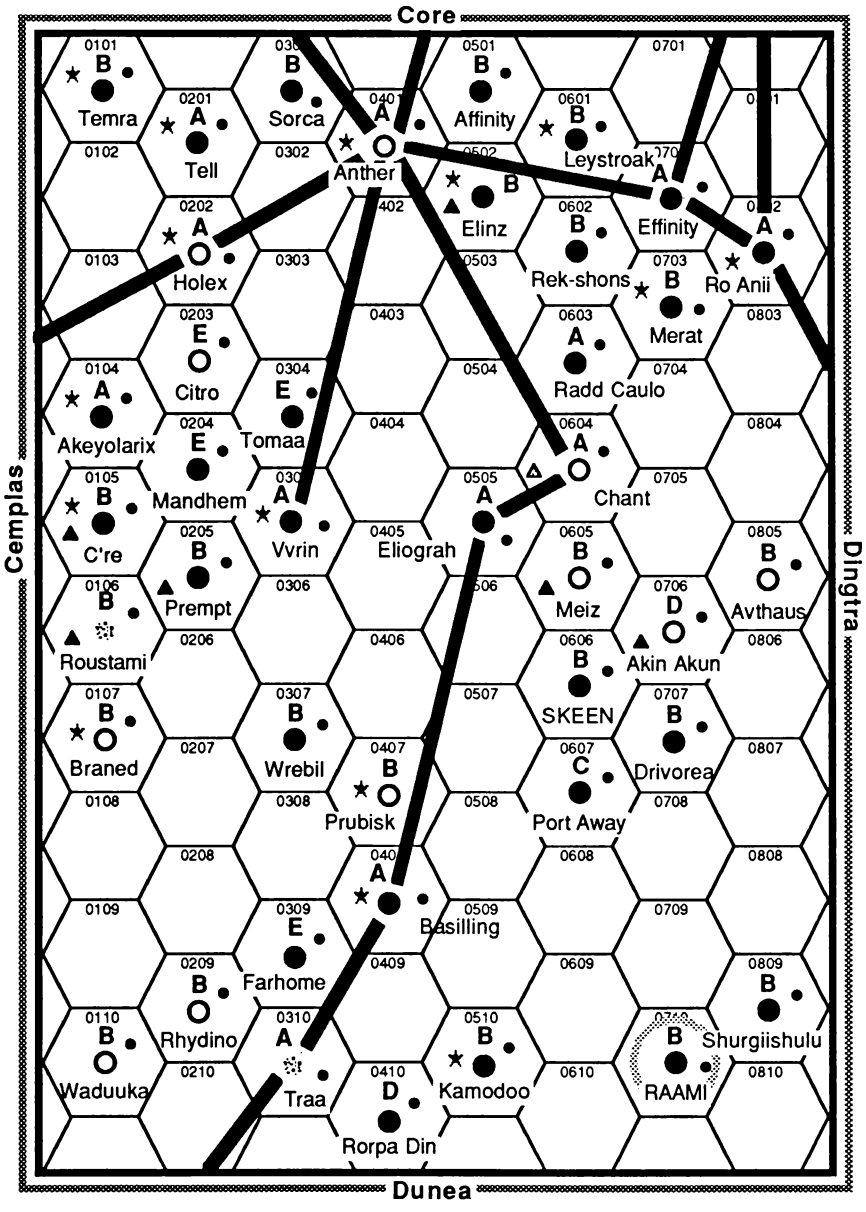
Chant (subsector K of Core Sector) is an aggressive, modern subsector. Over 25 percent of the worlds in this subsector are rated at tech levels 14 to 15.

Temra's bureaucratic government has recently implemented a policy of "workers' rights" which many employers claim is unfair to them. The rate of unemployment has risen sharply, but the government claims this is due to other factors.

Rhydino's doctors do not recognize the concept of mental illness, so the insane are allowed to roam freely as long as they commit no crime.

Name	*Location*	*UPP*	*Bases*	*Remarks*	
Temra	0101	B565786-B	N	Agricultural. Rich.	G
Akeyolarix	0104	A675446-E	N	NonInd.	G
C're	0105	B445885-C	A		G
Roustami	0106	B0008AF-C	S	NonAg. Asteroid Belt.	G
Braned	0107	B8B1411-C	N	NonInd. Fluid Hydrosphere.	G
Waduuka	0110	BAB4435-B		NonInd. Fluid Hydrosphere.	G
Tell	0201	A78A372-F	N	Low Pop. NonInd. Water world.	G
Holex	0202	A200353-F	N	Low Pop. NonInd. Vacuum world.	G
Citro	0203	E8B7333-7		Low Pop. NonInd. Fluid Hydrosphere.	G
Mandhem	0204	E554100-6		Low Pop. NonInd.	G
Prempt	0205	B5A2200-D	S	Low Pop. NonInd. Fluid Hydrosphere.	G
Rhydino	0209	B211779-E		NonAg. Ice-capped.	G
Sorca	0301	B245740-9		Agricultural.	G
Tomaa	0304	E455335-5		Low Pop. NonInd.	
Vvrin	0305	A485699-C	N	Agricultural. NonInd. Rich.	
Wrebil	0307	B94A775-7		Water world.	G
Farhome	0309	E628544-6		NonInd. .	G
Traa	0310	A000784-E		Asteroid Belt. NonAg.	G
Anther	0401	A300697-E	N	NonAg. NonInd. Vacuum world.	G
Prubisk	0407	B9A569A-B	N	Fluid Hydrosphere. NonInd.	
Basilling	0408	A443104-D	N	Low Pop. NonInd. Poor.	G
Rorpa Din	0410	D63A566-8		NonInd. Water world. Owned by Kamodoo.	G
Affinity	0501	B98A561-A		NonInd. Water world. Owned by Effinity .	G
Elinz	0502	B476000-D	A	Low Pop. NonInd. Barren world.	
Eliograh	0505	A524575-C		NonInd.	G
Kamodoo	0510	B565558-B	N	Agricultural. NonInd.	G
Leystroak	0601	B998656-9	N	Agricultural. NonInd.	G
Rek-shons	0602	B855746-C		Agricultural.	G
Radd Caulo	0603	A866645-9		Agricultural. NonInd. Rich.	G
Chant	0604	A160688-F	W	NonInd. Rich. Desert world. Subsector Cap.	G
Meiz	0605	B512847-B	S	NonAg. Ice-capped.	G
Skeen	0606	B49199B-F		High Pop. Industrial.	G
Port Away	0607	C357747-A		Agricultural.	G
Effinity	0702	A581651-F		NonInd. Rich.	G
Merat	0703	B423868-A	N	NonAg. Poor. Owned by Ro Anii.	G
Akin Akun	0706	D410666-7	S	NonAg. NonInd. Owned by Skeen.	
Drivorea	0707	B759300-D		Low Pop. NonInd.	G
Raami	0710	B522966-F		High Pop. NonAg. Ind. Poor. Military Rule. A	G
Ro Anii	0802	A473320-E	N	Low Pop. NonInd.	G
Avthaus	0805	B200879-E		NonAg. Vacuum world.	G
Shurgiishulu	0809	B552625-8		NonInd. Poor.	G

The Chant subsector contains 41 worlds with a total population of 10.128 billion. The highest population is 5.3 billion at Raami; the highest tech level is F at Tell, Holex, Chant, Skeen, Effinity, and Raami. All worlds are members of the Imperium.



Chant Subsector

Subsector K of the Core Sector

Playing the Characters

AKIDDA LAAGIIR

Akidda Laagiir, the journalist, is unique among the four knights travelling around the Imperium in our adventures, because as a child he had not decided what he wanted to do with his life ahead, nor did he show special aptitude at what turned out to be his chosen career.

Aybee, of course, had no chance to decide what he would do when he "grew up", but Dur Telemon was raised by a full-fledged"Scout family", and as a boy he knew that when he grew up he would follow in their footsteps by enlisting himself. Dr. Theodor Krenstein showed great scholastic promise in his youth, impressing both his mother and father, who encouraged him in his pursuit of higher education.

Akidda, on the other hand, could never quite decide what he wanted to do. He knew that whatever he chose had to be out of the ordinary, something that would put him in a special realm, different (if not better) than that of other people.

After his graduation from school, he worked in a number of odd jobs while "finding himself", including doing some light construction, working a stint as a short-order cook in a Denebian-style restaurant, and holding jobs as a cab driver in Mora's capital city, driving both wheeled and grav-powered vehicles.

It was while driving his cab over the city that he picked up a fare who would change his life forever. The editor of the *Mora World Review*, Jina Pomerantz, wanted a lift to her office, and during the ride, Akidda asked her about what she did. Pomerantz had a certain gift with words, and her description of "life in the press" so impressed Akidda that after delivering her to the building, he parked the cab, went inside, and applied for a job. What job? "Any job," he said, "as long as it's something I can sink my teeth into."

His wishes were not to be fulfilled. He started at the bottom as a copy boy, running errands and doing odd jobs for the reporters, writers, and editors at the *Review*. Surprisingly enough, he liked the lifestyle, despite its constant deadline pressure, and he stuck to it.

He knew that he could never advance unless he learned to write and edit, so he spent as much time as he could looking over the shoulders of his colleagues: asking them questions, offering to check their machines "to make sure they don't need any maintenance" (and simultaneously getting some surreptitious hands-on experience with them), and in general making a pest of himself.

Persistence pays off in the field of journalism, and after a couple of years an older reporter named Fil Greis took

young Akidda under his wing. Greis had a drinking problem which he hid from his superiors, and to cover it up he let his young apprentice write many of his stories for him. When Greis's editor found out about this, he fired Greis on the spot and replaced him with Akidda.

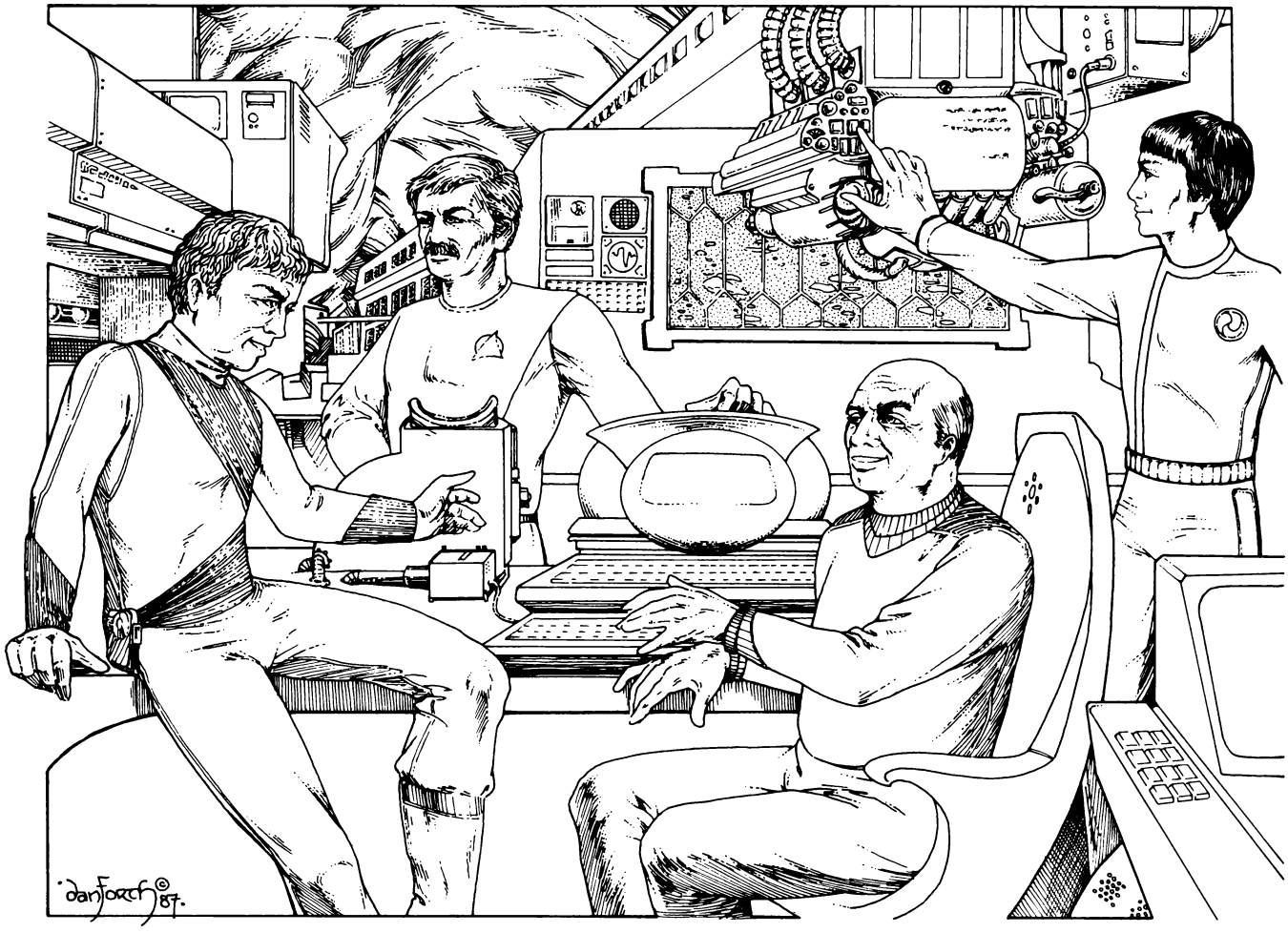
On Mora, a reporter's life is not always an easy one, and Akidda's was no exception. Mora is the sector capital of the Spinward Marches, making it a source of much important news, but of course it also has its own local government. The world is a matriarchy, and almost all of the highest governmental positions are held by women. The Duchess Delphine the Matriarch enacts all of Mora's laws herself; fortunately, her laws so far have been reasonable, and in general the populace likes her. At the same time, to a maverick journalist the duchess must have appeared whimsical and heavy-handed at times, and some of Akidda's opinion pieces about her were less than favorable.

Akidda has always been slightly prejudiced against "the system", preferring fresh ideas and fresh ways of doing things. In order to get a detailed story about organized crime on Mora, he joined a gang of air/raft thieves and participated in their nightly raids. Since he had done this without the permission or even foreknowledge of his editor, he probably would have been fired (and then thrown in jail) if not for the fact that he uncovered a local police chief as the kingpin behind the gang.

Chief among Akidda's skills is his ability to draw people out, to get them to talk about themselves and the things important to them. His interview articles are well-received by the public, and are well-known for bringing out a new, unknown aspect of the subject's personality.

In 1098, the *Travellers' Digest* announced its Touring Award, a contest held every seven years to reward outstanding journalists in its area of publication. Akidda's piece, "The Imperial Frontier: The Next Millenium", was one of the first entries received. In it, he discussed the frontier sectors of Corridor, Deneb, Spinward Marches, Trojan Reach and their role in shaping the growth of the Imperium in the next 1000 years. In 258-1099, Akidda received the announcement that he had won the *Travellers' Digest* Touring Award, including membership in the Travellers' Aid Society. A week later, Akidda left for Aramis/Aramis, where he met his nephew, Dur Telemon, Theodor Krenstein, and Aybee Wan Owen, his current travelling companions.

As part of the award, the recipient is expected to use the high passage tickets generated by TAS membership to travel in the *Digest's* area of publication, writing articles that "promote understanding of the cultural diversity within the Imperium". Akidda broke precedent by travelling outside the circulation area, continuing his trip to Capital. As he has continued to file fascinating new stories, the editors of the *Digest* have wisely decided not to call him back—at least not just yet.¤



Traveller Q & A

Traveller Q&A provides answers to questions from readers on various aspects of **Traveller** and **Traveller:2300**. If you have a question you would like to have answered, send it to: Digest Group Publications, Q&A, 8979 Mandan Ct., Boise, ID 83709. We will publish the best of these questions and answers in this column.

The answers come from a variety of sources. When a question can be dealt with by a simple quotation from a published work, we do the digging and publish the results of our research. When a question breaks new ground, it is answered by ourselves or by some other eminent **Traveller** authority.

Every single answer published in this column is seen and approved by Marc W. Miller, the leading designer of **Traveller** and **Traveller:2300**. We want to stress to our readers that anything appearing in **Traveller Q&A** is *official* unless explicitly stated to be a variant.

I'm confused: just what are Traveller:2300 and MegaTraveller?— E.B.

First of all, **Traveller:2300** is a totally new game, set in the **Twilight:2000** universe. Essentially, it's **Twilight: 2000** three hundred years later, after mankind has picked up the pieces from the nuclear war, and has begun venturing out to the stars. **Traveller:2300** *is not* classic **Traveller** with the Imperium and so on; **Traveller:2300** is a completely different science-fiction game.

Our staff here at Digest Group Publications played a hand in the design of **Traveller:2300**, by writing the task system. Since we played a part in bringing the game to life, we're naturally interested in it. **Traveller:2300** is now beginning to develop a personality separate and distinct from good ol' classic **Traveller**. We feel it is important that playing **2300** is different from playing classic **Traveller**.

In that light, we are striving to give our **2300** section a distinct sense of purpose, so that we can emphasize what makes **2300** different from classic **Traveller**. One of the areas of **2300** we intend to concentrate on in our magazine (and one that has not yet been discussed much in other literature) is the American Arm. So look for some neat articles to come on what's happening with the Americans circa 2300 A.D. I think you'll enjoy what we've got planned.

(By the way, notice that we say just **"2300"**, which is what GDW is encouraging in order to distinguish the two games.)

Even though **2300** is fascinating, classic **Traveller** is our first love—which brings us to **MegaTraveller**. Just what is **MegaTraveller**? In a sentence, **MegaTraveller** is a significant update of classic **Traveller**, but it is *still* the **Traveller** we all know and love. Ten years ago, when GDW introduced **Traveller**, it was the most sophisticated, state-of-the-art role playing game yet introduced. In the past ten years, role playing has progressed such that **Traveller** has started to show its age. **MegaTraveller** takes the best that has been introduced for **Traveller** (as well as some new state-of-the-art innovations), and folds it all into a crisp, new, better-than-ever **Traveller** rules set, that's also (once again) a state-of-the-art leader in role-playing games.

MegaTraveller is being produced by GDW, although our staff here at DGP is honored that GDW has selected us as the developers to spearhead the compiling and editing of the original **Traveller** material to produce the new rules. The rules will be available from Game Designers' Workshop as three 96-page books: *The Players' Guide*, *The Referee's Guide*, and *The Imperium Encyclopedia*. The books will be available individually (probably for $10 each) during the last quarter of this year, and a boxed set (with several extra goodies besides just the three books) will be available after that (probably costing $30). The game will be called **Mega-Traveller**, to clearly distinguish the updated rules from the original rules.

Besides the rules revision, **MegaTraveller** heralds a significant swing in the politics of the Imperium. With the untimely assassination of Emperor Strephon and all immediate heirs, the structure of the Imperium is crumbling as the nobility struggles to find an obvious new leader. A challenger rises, some of the populace rallies behind him—others oppose him—and the seeds of fragmentation take root. While some troubled times are ahead for the Third Imperium, the turmoil promises to make the new **Mega-Traveller**-era adventures some of the most exciting yet. *—Joe D. Fugate Sr.*

Your article about Imperial nobles was most informative, but I still have a question. I am trying to work up an adventure in which a high noble patron is also a high ranking criminal. As is the case with most such criminals, those near him do not know of his "work". Is this possible in Traveller? How could such a noble keep this life hidden from the peerage?—M.L.

It is certainly possible for a criminal to be a noble, or for a noble to be a criminal. Perhaps the most blatant example of this is the case of Strin Venat, the Duke of Feltan Subsector (subsector E of Massila Sector) during the early years of Cleon IV. Strin was a respected member of the peerage, and served on several important committees within the Moot, including a tenure as chair of the Council of Imperial Revenue. After Strin's death, it was discovered that he had been the captain of the *Ray of Death*, a notorious pirate ship that had terrorized shipping lanes in and around Feltan for over 20 years.

How did Strin keep this part of his life a secret? Very carefully.*—Gary L. Thomas*

Why are nobles barred from taking anagathic treatments? Why would they reject the possibility of eternal life?—N.H.M.

For the lesser nobility, custom with regard to anagathics varies considerably from culture to culture. Most nobles (as indeed most commoners) would dearly love to extend the healthy, active portion of their lives for as many years as possible, but many of their subjects do not relish the potential of a correspondingly extended reign by those above them. This attitude is correspondingly greater against the higher ranks of the nobility. On worlds without this bias, nobles who can afford anagathics and don't mind the risk often use them.

Some nobles from societies that do not allow anagathic treatments for rulers serve shortened periods, and then resign from their posts to undergo these treatments. Others may be treated secretly, a tricky undertaking because of some of the more obvious side effects of anagathics.

While the Moot has never set any official policy, it was the practice of most modern emperors not to use anagathics. Most historians agree that the earliest emperors did use anagathics heavily, but a few researchers claim that their extended lifespans resulted from pure Vilani bloodlines.

Remember, too, that anagathics do not really grant "eternal life" (see the article in this issue), and are not without risk; one reason, perhaps, that recent emperors avoided anagathics is that they thereby kept their lives healthy—even if thereby keeping them short.—*Gary L. Thomas*

What are the personal characteristics for Varian, Lucan, and Margaret?—M.M.

Varian, Strephon's nephew, was accidentally shot by his brother Lucan (or so Lucan claims) in the confusion after Strephon's assasination. Margaret (from a lineage different from Strephon's) claims to the most legitimate successor to the throne. Here are their personal characteristics, generated using the Noble career type in **MegaTraveller**:

Varian 68886F Age 26
Small Watercraft-2, Leader-1, Ship's Boat-1, Foil-1, Bribery-1, Grav Belt-1

Lucan 67888F Age 26
Handgun-1, Computer-1, Foil-1, Gambling-1, Physics-1

Margaret 3388CF Age 43
Linguistics-3, Computer-3, Artisan-2, Leader-1, Carousing-1, Instruction-1, Chemistry-1, Biology-1, Grav Vehicle-1

All three hail from the world of Capital, so their homeworld statistics are the same as those presented for Strephon in issue #9.—*Joe D. Fugate Sr.*

SPECIAL TRAVELLER Q&A BONUS...
Questions and clarifications on *Grand Survey.*

Since *Grand Survey's* publication last year, we have received many letters with questions and useful suggestions. In addition, we've made notes ourselves as we continue to use *Grand Survey* here at DGP. The following questions and answers are combined from these sources.

With *Grand Survey,* the highest gravity a world can have is 1.4 g. Doesn't it seem reasonable that there could sometimes be worlds with higher gravity?

Good point. Charles Hensley of Lubbock, Texas sent us some excellent enhancements to the *Grand Survey* density and resource tables to allow high-gravity worlds. These modified tables are shown below. With these additions, you can get a world with a gravity of over 2.0 g— unquestionably an inhospitable world to humans. But such a gravity level can add a most definite "this sure ain't earth" feel to your adventure.

The EMS sensors are neat, but haven't you forgotten spectrometers? They are very important to analyzing astronomical bodies from a distance—I'm puzzled why you didn't include them.

While it may not be obvious, we haven't forgotten spectrometers in our sensor section—actually they are there. They are part of the optical EMS array. Spectrography involves the visible light portion of the electromagnetic spectrum. The EMS array, coupled with a computer, integrates and correlates the entire electromagnetic spectrum into "one" sensor. This includes sensors for the visible light portion: spectrometer, telescope, camera, and visible light laser sensor.

On this subject, Marc Miller has pointed out to us that EMS allows you to easily record computer enhanced video scans from orbit or high altitude. Have the EMS computer compare the recorded images for you and your EMS sensors can tell you if anything has moved. (Take note—EMS is also a motion sensor!) For example, in a 10 km square grid, you might be able to detect anything that moved 2 meters. Then (if you're on an exploratory mission) you can go down to the surface with your neural activity sensor and "check it out". It may turn out to be only wind-blown vegetation (tumbleweeds...); on the other hand, it might be a previously undiscovered carnivore (tigers!).

What are the temperature and pressure limitations of the hostile environment vacc suits on page 22?

We accidentally neglected to include these details about the hostile environment vacc suits, so here they are:

The TL 8 hostile environment suit protects against temperatures +150°C to -160°C and pressures up to 10 atm.

The TL 9 hostile environment suit protects against temperatures +200°C to -180°C and pressures up to 10 atm.

The TL 12 hostile environment suit protects against temperatures +500°C to -180°C and pressures up to 100 atm.

The TL 13 hostile environment suit protects against temperatures +1300°C to -200°C and pressures up to 1000 atm.

The TL 14 hostile environment suit protects against temperatures +1800°C to -250°C and pressures up to 1500 atm.

How do I compute the rotation and latitude modifiers for temperature for a tidally locked world?

Grand Survey never fully answers that question, and it is a good one. The world Uakye in this issue is just such a tidally locked world, and we used some logical extrapolations of the temperature rules to come up with its temperature modifiers.

First, the world's base temperature is the temperature found in the twilight zone. For example, Uakye's base temperature is 18.6°C, which is also the base temperature found in the twilight zone.

Effectively, a tidally locked world has an *infinite* rotation for purposes of computing temperature. Thus, you use the absolute limit for the daytime (bright side) and nighttime (darkside) when computing the effects of rotation. For example, Uakye has a very thin (UPP 3) atmosphere. Looking on the Rotation Temperature Effects Table (Table 21) in *Grand Survey,* we find the following formulas for the absolute limits: daytime, (Base + 273) x 0.8; nighttime, (Base + 273) x 0.5. This computes out to be: (18.6 + 273) x 0.8 and (18.6 + 273) x 0.5, or +233°C on the bright side, and -145°C on the dark side. So the high temperature on the bright side is 233 +18.6 or 251.6°C. The low on the dark side is 18.6 - 145 or -126.4°C.

To work the latitude modifiers, we need to use the recommended alternative map projection for tidally locked worlds: the twilight zone becomes the equator, with the bright side toward the top of the map, and the dark side toward the bottom of the map. The two hex rows surrounding the

equator (both hex row 1) are the twilight zone. To compute the temperature modifier (plus or minus) for the other hex rows, divide the bright side temperature modifier by 5.

Looking at Uakye again, dividing the bright side temperature of +233°C by 5 gives a modifier ±46°C per hex row. So hex row 2 on the bright side has a temperature of 18.6 + 46 or 64.6°C, hex row 3 is 18.6 + 92 or 110.6°C, and so on to the bright side limit of 251.6°C. Likewise, on the dark side hex row 2 has a temperature of 18.6 - 46 or -27.4, hex row 3 is 18.6 - 92 or -73.4°C and so on, to the dark side limit of -126.4.

Clarification: World Hex Movement Guide

Here is a handy quick reference guide to world hex size and movement. It serves well as a quick reference when you don't want to slave over a calculator to determine how far something can move in a given time. This chart is a simplified restatement of the Transportation Movement Rates Table on page 42 of *Grand Survey.*

Clarification: Hovercraft Movement

Speaking of the Transportation Movement Rates Table, we did not clearly state that hovercraft are also considered water vehicles. The difference is that they can travel over water at the same rate of speed as all other terrain (that is, with a multiplier of 1.0).

We thank our fellow **Traveller** players for their questions and comments on *Grand Survey.* They have been most helpful. If you have any other comments or questions, don't hesitate to write us. We'd love to hear from you.—*Joe D. Fugate Sr.*¤

Table 35 NEW

NATURAL RESOURCES

Resource	Density: Hvy Core	Molten Core	Rocky Body	Icy Body
Agricultural	+3	+4	+4	-4
Ores	+8	+7	+3	0
Radioactives	+7	+5	+3	0
Gems & Crystals	+6	+5	+2	0
Petrochemicals	+2	+4	+1	-4

Table 36

PROCESSED RESOURCES

Resource	Density: Hvy Core	Molten Core	Rocky Body	Icy Body
Agricultural	+4	+5	+5	0
Alloys	+8	+4	+4	-1
Agroproducts	+3	+4	+4	-1

Table 37

MANUFACTURED RESOURCES

Resource	Density: Hvy Core	Molten Core	Rocky Body	Icy Body
Weapons	+3	+4	+4	-1
Mechanical Parts	+3	+4	+4	-1
Heavy Equipment	+3	+4	+4	-1
Electronics	+1	+4	+4	-1
Gravitics	+5	+4	+4	-1

NEW

Table 6.1

GENERAL WORLD TYPE *(non-Gas Giant)*

NEW →

Die Roll	World Type
1-	Heavy Core
2-10	Molten Core
11-14	Rocky Body
15+	Icy Body

Modifiers:

If size 4-, DM+1
If size 6+, DM-2

If atm 0-3, DM+1
If atm 6+, DM-2

When using Scouts:
If outer zone, DM+6

Table 6.2 NEW

MEAN WORLD DENSITY (K)

Die Roll (3D)	World Type: Heavy Core	Molten Core	Rocky Body	Icy Body	Gas Giant
3	1.10	.82	.50	.18	.10
4	1.15	.84	.52	.20	.11
5	1.20	.86	.54	.22	.12
6	1.25	.88	.56	.24	.13
7	1.30	.90	.58	.26	.14
8	1.35	.92	.60	.28	.16
9	1.40	.94	.62	.30	.18
10	1.45	.96	.64	.32	.20
11	1.50	.98	.66	.34	.22
12	1.55	1.00	.68	.36	.23
13	1.60	1.02	.70	.38	.24
14	1.70	1.04	.72	.40	.26
15	1.80	1.06	.74	.42	.27
16	1.90	1.08	.76	.44	.28
17	2.00	1.10	.78	.46	.29
18	2.25	1.12	.80	.48	.30

Heavy Core: World has a molten core of heavy metals surrounded by a cooler crust.
Molten Core: World has a metallic molten core surrounded by a cooler crust.
Rocky Body: World has a cool, rocky core and crust.
Icy Body: World is composed of ices, with few or no rocky components.
Gas Giant: A large planet (20,000 to 120,000 km diameter) composed primarily of hydrogen and hydrogen compounds. May or may not have a core of solid matter.

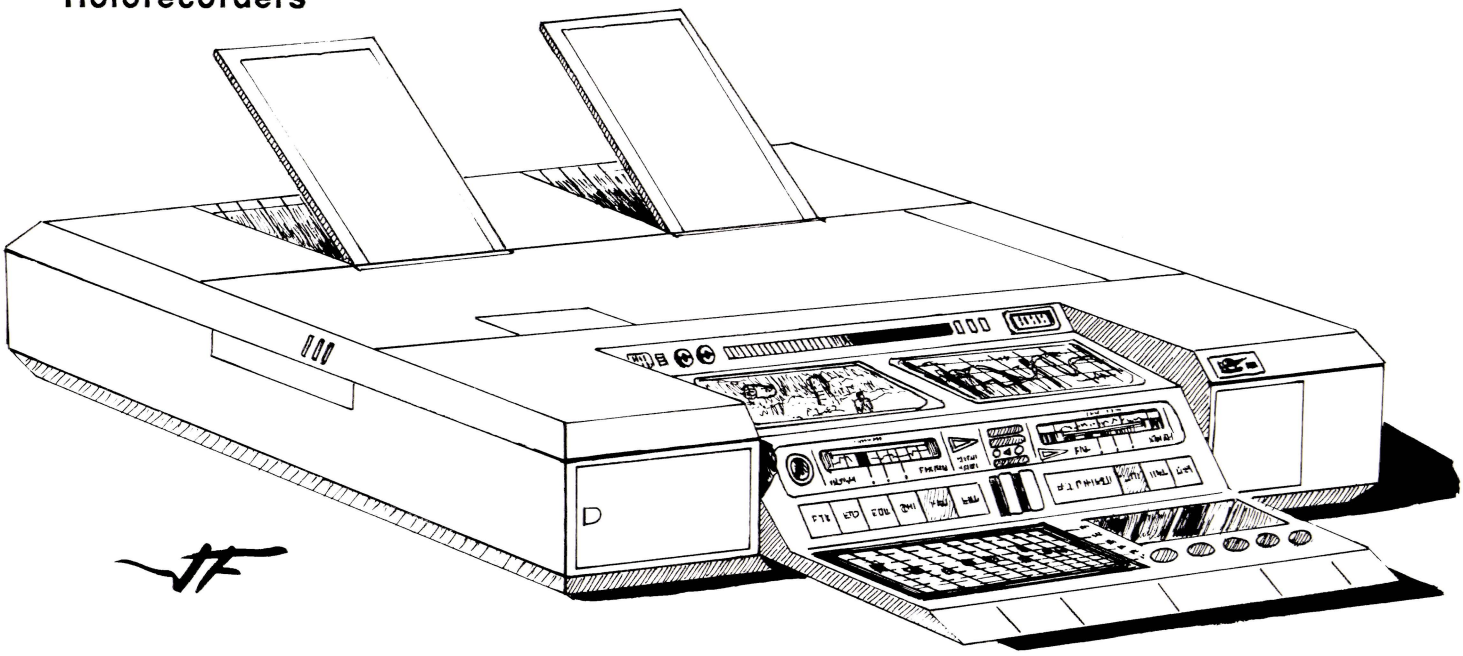
WORLD HEX MOVEMENT GUIDE

UPP	Diameter	Hex	PER HEX RATE: Foot†	Sailing *	Steamship *	Ground Car(Road) †	Ground Car(OffRd) †	ATV/AFV whl,road †	ATV/AFV whl,offrd †	ATV/AFV tracked †	Hovercraft †	Grav Vehicles/Aircraft †		Space Vessel †
1	1600	140	2/wk	3/wk	6/day	6/day	1.7days	3/day	1 day	.6 day	3/day	6/day	30/day	60/day
2	3200	280	1/wk	2/wk	3/day	4/day	2.5days	2/day	2 days	1.2 days	2/day	4/day	20/day	40/day
3	4800	420	1.5wks	1/wk	2/day	2/day	5.0days	1 day	3 days	2 days	1 day	2/day	10/day	20/day
4	6400	560	2wks	1.3wks	1.5/day	1.5/day	6.7days	1.3 days	4 days	2.5 days	1.3 days	1.5/day	7.5/day	15/day
5	8000	700	2.5wks	1.7wks	1.2/day	1.2/day	8.3days	1.7 days	5 days	3 days	1.7 days	1.2/day	6/day	12/day
6	9600	840	3wks	2wks	1 day	1 day	10 days	2 days	6 days	3.5 days	2 days	1 day	5/day	10/day
7	11200	980	3.5wks	2.3wks	1.2 days	1.2 days	12 days	2.4 days	7 days	4 days	2.4 days	1.2 days	4/day	8/day
8	12800	1120	4wks	2.7wks	1.3 days	1.3 days	13 days	2.6 days	8 days	4.5 days	2.6 days	1.3 days	3.5/day	7/day
9	14400	1260	4.5wks	3wks	1.5 days	1.5 days	15 days	3 days	9 days	5 days	3 days	1.5 days	3.3/day	6.5/day
A	16000	1400	5wks	3.3wks	1.7 days	1.7 days	17 days	3.4 days	10 days	6 days	3.4 days	1.7 days	3/day	6/day

Notes: *Assumes 24 hour days (3 shifts)
†Assumes 8 hour days (1 shift)

Tech Briefs

Holorecorders



What a miracle it is that we can walk into a store (at least on a high technology world—and at any starport on a low technology world) and purchase a holocrystal containing the latest issue of a magazine. The tiny holocrystal, about the size and shape of a man's thumb, fits into a holographic player at home, and we are instantly in another world.

The holographic player might vary considerably in size and shape, but in a nicer home the system is typically built into a living room wall, so that full-size three-dimensional images can be projected into the center of the room. If the magazine has a travel feature, we feel as though we're really there—if we're taking a jungle cruise, we can see the water below us, and watch low-hanging branches of the trees pass by on either side as the boat courses down the river.

If the magazine has an interview with some notable public figure, the interviewer and his subject are sitting with us, seemingly in our home, so not a nuance of expression is lost. If we are sports fans, we can be literally "on the field" with every bit of the action happening around us. We can see expressions on players' faces, and see the color and excitement as though we were participants in the game.

Fictional works can use all the techniques developed over the years since the first flickering black and white silent film screened thousands of years ago.

DEVELOPMENTS IN HOLOGRAPHY

At earlier tech levels, writers and journalists were constrained to the use of primitive implements, typically starting out with marks in soft clay with a blunt stick, or paintings scratched into the walls of caves using natural dyes formed from ground-up plants, animals, or minerals.

At higher tech levels, the marvels of science allow intelligent beings to more vividly recreate reality, recording it and manipulating it to best present it to the waiting minds of the public.

An earlier Tech Briefs column discussed these recording devices in general; in this column, we present a detailed look at the possibilities afforded by holographic imaging, recording, and playback systems in the fields of journalism, the arts, and the sciences.

The word holography comes from the Ancient Greek roots "holo-" meaning "whole" and "graph" from the Greek verb meaning "to write". A holograph (sometimes called a hologram) is a three-dimensional image produced from reconstructing a wavefront formed by a diffraction pattern of two tightly coherent beams.

The earliest holographs were created with laser beams and a photographic medium, typically a plate of glass with a thin emulsion coating it. One laser beam was reflected off the subject, and a second laser beam was aimed directly at the glass plate. Since both lasers are of the same wavelength, the interference caused by the subjects' reflection creates a diffraction pattern on the plate. This pattern is not photographic; although it is developed as a negative, it does not show any image in ordinary light.

Projecting a laser of the proper wavelength at it, however, produces a three-dimensional image on the medium. A viewer can move his head back and forth and see the subject in different perspectives, looking first at one side and then at the other side of the subject. These original holographs were fixed, of course, with no animation, but even so it was possible with a laser to create an image in less than a billionth of a second, allowing the viewer to see processes not normally visible.

Lasers are not the only coherent wave source from which holographs can be made. Other early attempts used electrons or masers (microwave lasers). Today, at the typical Imperial tech levels, holographs can be made even from ordinary noncoherent light, but for reasons explained below, masers are most common.

Holocrystals, or holographic recording media, capable of storing vast amounts of information in a very small physical container, are used today not only to record holographic images, but can be found in almost every computer to record digital data. For more details on these holocrystals, refer to "Traveller Tech Briefs: Recording Devices" in *Travellers' Digest* Adventure 2.

THE HOLORECORDER

The typical journalist's holorecorder is a device about the size and shape of a businessman's attache case. The holorecorder weighs about six kilograms, and rechargeable batteries allow it to operate for up to eight hours at a time. An optional conversion attachment allows the holorecorder to operate from an external power source.

The holorecorder has four input terminals, two of them providing the holographic image, one providing an optical image for color rendition, and one for stereophonic sound.

The holographic image is detected with two masers, or microwave lasers, operating at a low intensity from two small flat projectors. The image from the two masers is three dimensional, but covers only 180 degrees of the scene. (A viewer sitting on the opposite side from the rest of the audience sees the image exactly reversed.) Using three holorecorders, and computer processing the images later into one image, a journalist can produce a complete 360-degree view of the action. Audiences can view programs in a "theater-in-the-round" style, with incredible realism. "Thriller" suspense programs in particular can terrify an audience, with the villain able to leap from the stage into the audience while striking a menacing pose.

The masers can of course cut through any atmospheric disturbance, making it possible to get a perfectly clear image even in the presence of thick smoke or steam, although the optical image will of course not provide true-to-life color in these instances. When a misty feeling is desired for the subject at hand, computer postprocessing adds it into the scene later.

The skilled producer can use the holorecorder's internal computer to perform an almost limitless variety of postprocessing, to enhance the image and combine it with others in various ways. The holorecorder can hold up to six holocrystals, each capable of storing up to five hours of action.

Besides two small flatscreens on the control panel, the holorecorder itself has three three-dimensional projectors, two of which produce small images above the surface of the device and one which can project a larger image about four feet away. (This three-dimensional projection apparatus is not shown in the illustration.) Thus the holorecorder can be used both for serious editing work and to view entertainment programs, when the operator needs a break or wants to display his handiwork to others.

Dynamically configurable controls on the holorecorder give the operator control over the sequence recorded down to a minute level of detail. Action can be slowed down 180 times, so that a second's worth of recording can be viewed over a period of three minutes, giving the editor as great a degree of control as desired.

The editor can manipulate two images at once (or actually view two images at once), choosing which one he wishes to use or combining them in overlay, dissolve, and fade shots. Sound effect recordings are available from many commercial sources for overdubbing if desired.

The images actually recorded by the maser holographic pickups are of course monochromatic; that is, they do not show true color. The optical receiver does record color, but on the other hand does not have the penetration capabilities that the masers do. The holorecorder's computer automatically combines coloration with the monochromatic holographic image to produce a full-color three-dimensional image.

The entire coloration process can be controlled by the operator, so images can be enhanced or even changed. A subject's eyes could be changed from brown to blue at the touch of a button. Unwanted parts of scenes can be edited out in a similar fashion. (While it is not the current practice to perform this editing in news reports, it must be done in 360-degree entertainment programs or the holographic cameras themselves have a disturbing habit of showing up in the final picture.)

The computer, dedicated to editing processes, can perform remarkable revisions to a scene. A lamp post in the way of a busy street scene can be removed, leaving a clear, unobstructed view for the audience later on. A reasonably steady journalist can run alongside a moving subject, recording all the while, and then edit out any annoying camera jiggle from the final product.

HOLOGRAPHIC RECORDING ROBOTS

In situations where even the journalist's skill and determination can not put him up where the action is, he can use further electro-graviti-mechanical assistance. An example is the 476-INLAV camera robot, a small, spherical robot outfitted with two holographic recorders and a holographic display unit.

The camera operator robot is gravitic powered, so it can move virtually anywhere. Two tiny arms are used to stabilize the robot in windy conditions. A radio inside the robot allows the journalist to give it detailed instructions from afar.

While the camera operator robot is versatile and powerful (with a skill level equal to that of a professional cinematographer), its high price of Cr274,000 prevents it from being used in everyday situations by nonprofessionals. (Complete details of the camera operator robot can be found in *101 Robots*.)

OTHER USES OF HOLOGRAPHIC IMAGING SYSTEMS

Holorecorders and holographic images find a wide variety of uses in modern life. Portable units in hospitals can safely project a real-time three-dimensional image of a patient's internal organs, using coherent ultrasound waves to record the information, and a standard laser system to play it back. Similar systems are used in many manufacturing processes.

Use of holorecorders is now standard practice for law enforcement agencies on most high-tech worlds. Trained personnel can record every detail of a crime scene, in such a way that investigators can study the evidence months or even years later. Holographic cameras are also found in security systems, tending to replace the older two-dimensional video cameras.

In the military, large holographic "arenas" simulate actual combat situations, and enlistees can practice their skills in "live action" scenarios without endangering their lives. Smaller systems are used in training in hand to hand melee.

In more mundane facets of our lives, most of us can remember our first time "driving" a grav vehicle. Holographic chambers give a complete 360-degree spherical view, not only of the action to the side but also above and below the "air/raft". Meanwhile, artificial gravity gives the sensation of motion and centripetal force during, say, sharp ascents or tight curves. The skies over thousands of planets are safer thanks to these holographic training simulators.

HOLOGRAPHIC RECORDER STATISTICS

Professional Model Holographic Recorder
TL 15 6 kg Cr60,000
Holocrystals (5 hour capacity)
TL 15 negligible weight Cr50 ¤

More Effective Roleplaying

THE GAMING DIGEST–REFEREE'S TIPS–PART 1'

–by Gary L. Thomas

"O'K, guys, time for another session of **Traveller**. Is everybody ready?"

"Sure, Mary, we all have our character sheets here."

"Good, John. To start, you're all on a starship. You can go to Prithee or Belgin. Which will it be?"

"Belgin," John says.

"No, I'd rather go to Prithee," says Jack.

"Probably doesn't make any difference—let's go to Prithee," says John.

"OK, you're at Prithee. Some rich guy wants to hire you to rescue his daughter, who's been kidnapped. Interested?"

"Sure," says John.

"No, I don't want to," says Jack.

"OK, then, there's a woman in a starport bar who says that she wants somebody to sneak into her brother's house and steal back her necklace. How does that sound?"

"Sure," says John.

"No," says Jack.

"Then how about..."

A SLIGHT EXAGGERATION

All right, I admit it, no one plays **Traveller** quite that badly, or everyone would be fast asleep in a matter of minutes. But the game *could* be played that way, rolling the dice when necessary, and proceeding through the whole scenario in an entirely lackluster fashion. What's missing here? Roleplaying.

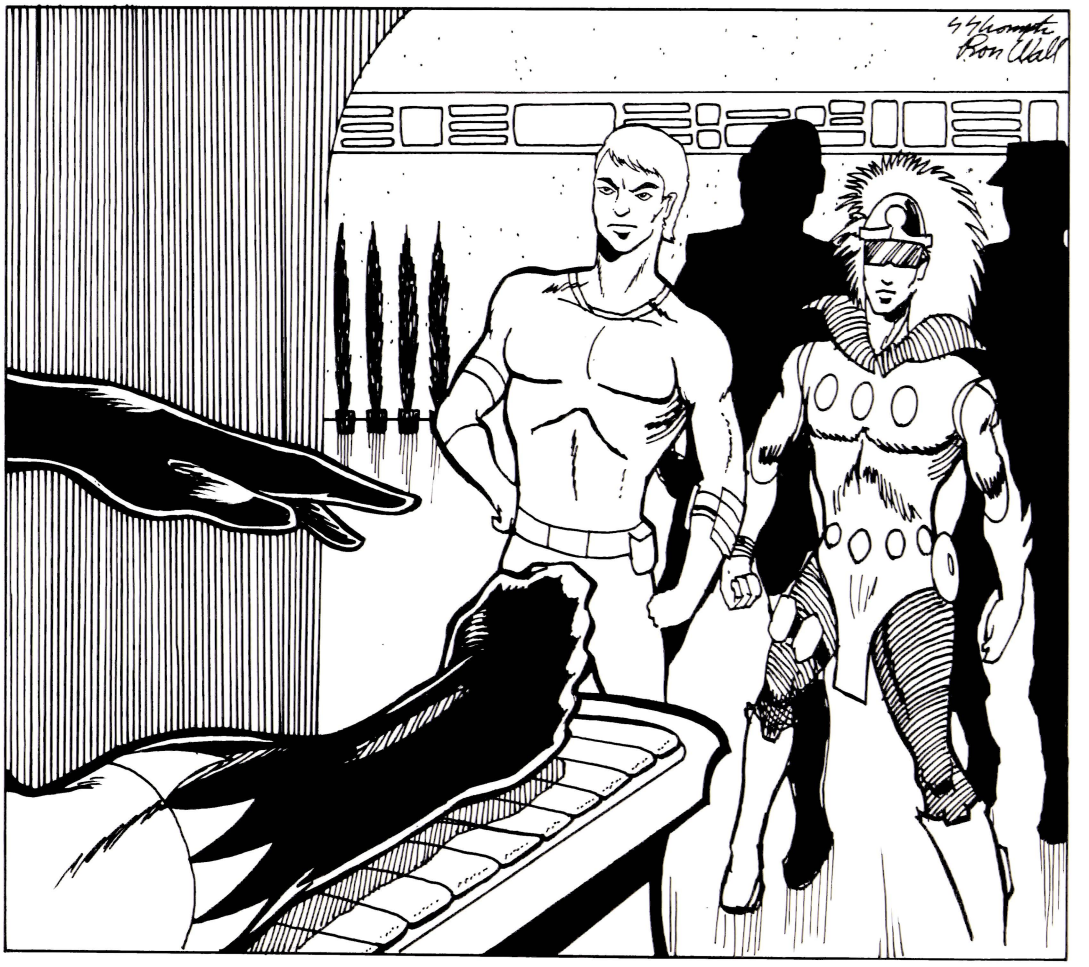
Obviously, I'm a big fan of roleplaying, or I wouldn't have shepherded the same four characters across half of the Imperium in the last two years. But I'm surprised sometimes at how wide the variation in roleplaying is, particularly in a game like **Traveller**. Unfortunately, if one never explicitly learns the proper techniques, it's all too easy to miss out on some of the fun and excitement that real roleplaying offers.

Roleplaying has a lot of advantages over other game activities, not the least of which is that conversation is generally safer than combat. Sure, we need the occasional gunplay to spice things up, but roleplaying would probably be just as realistic without it—after all, when's the last time *you* got in a firefight?

In this issue, we are going to examine a variety of techniques that make roleplaying easier and more fun.

PRACTICE, PRACTICE, PRACTICE

Rule number one should be simple and obvious, but too often it is overlooked just because it is so obvious: practice makes perfect. Roleplaying is a skill, and it is a difficult skill to learn, but like any skill, one's ability at it can



be enhanced by serious practice. Serious practice? Hold on a minute, this sounds like the piano lessons Mom made me take when I was a kid. Not to worry! Remember that we're practicing a *game*, and games are meant to be recreational, which means: games are supposed to be fun. If your practice is not fun, then you have my permission to go outside and play. (Wish Mom had said that about the piano.)

In **Traveller**, practice means playing as often as you can. It means studying the rules, rolling dice, generating new characters,generating new worlds, designing space ships, developing new equipment, and just getting together with your buddies and having a good ol' time.

A SLIGHT DIVERSION

When is the last time you generated a set of animal encounters? When is the last time you engaged in interstellar trade? When is the last time you ran a large-scale combat session? The advantage of **Traveller** is that there is such a smorgasbord to choose from that you can pick and choose to do only the things you like. You don't enjoy large-scale combat? Then don't do it—go ahead and let that skill get rusty. You'd rather detail a world's geography? Then go ahead, and practice that instead. It's a game, not a job, and you know what you want to get out of it.

This diversity also allows you to tailor a campaign to the preferences of your players. I knew one fellow in my campaign who hated anything to do with starships. (How could a person playing **Traveller** not enjoy starships, you ask? Never mind, it's a long story.) Anyway, when I knew that he would be in on a session, I made sure that the adventure didn't revolve around starships. I would keep the characters on one particularly interesting world, for example, or I would see to it that some patron had already arranged travel so that his character wouldn't have to mess with it. In any case, he enjoyed playing more because my scenarios had what he liked, and I enjoyed it more for his enjoyment.

This isn't only a negative injunction, incidentally. If one of your players really gets into some aspect of the game, then that aspect is the one I recommend that you practice. Just demonstrating to your players that you care about their interests adds a lot to their enjoyment. The player who is intrigued by especially high-tech equipment, for example—he'll get a kick out of the game if his character stumbles across an Ancient artifact, or some other nifty gadget from a high-tech society that you've worked up.

But I'm getting far afield from my promised subject for this issue—better roleplaying. I apologize, and claim as my defense only that roleplaying is easier if everyone is having a good time. Besides, you aren't roleplaying when you're thumbing through a rule book, and practice at the legalistic aspects of the game beforehand will save you from having to do that when you could be engaged in some fascinating encounter instead.

WHY ROLEPLAYING?

Let me hammer it into you once more—the whole point of playing a game is to have fun. So what games are fun? Some people like golf or baseball, some are into historical wargames, others just enjoy a quiet evening of Monopoly or Scrabble. I like roleplaying games better than any of these, because roleplaying lets me do what none of these other recreations allows: roleplaying lets me be myself.

Just hold on a minute, you say, how can that be? It would rather seem that roleplaying requires me to be someone else entirely. If I put on my "Dur Telemon" cap during a session, then I can't be me, can I? If I'm acting as AB-101 or Theodor Krenstein, am I not pushing Gary Thomas into the background? Yes and no. Yes, I'm pushing Gary Thomas into the background, because Gary Thomas is *not* Dur Telemon. (Just ask anyone who knows us both.) But no, I'm not pushing Gary Thomas into the background, because it's impossible for me to do that. Anything I do, just because I am the one doing it, will bear some marks of my influence. When I play Dur, I play him differently than any of you do, because you and I are entirely different individuals, with our own personalities. When we play, we imbue our characters with some of those features of our personalities, and that's what I mean when I say that roleplaying lets me be myself.

I can't be a Scout, to put it in simpler terms. I don't have the patience to spend long weeks in space, drifting from world to world in the featureless grayness of jump space. I don't have the physical stamina to pull on a vacc suit and run up and down the hills of some planet's surface, either. But somewhere, in the back of my mind, I have the desire to explore, I have the desire to pilot a starship into uncharted systems, I have the desire to challenge my physical body against the strenuous conditions of some hostile world. Playing Dur in **Traveller** lets me do those things and more. It lets me be myself in a way that physically I never can be.

OUT OF SIGHT, OUT OF MIND

And this aspect of the game is not limited to the physical realm, either. Roleplaying lets me be myself in mental ways, in psychological ways, that aren't possible in my humdrum day-to-day existence either. Dur can be brash in circumstances where I probably couldn't (or wouldn't) be brash. Dur can take chances when my own caution would carry the day in real life. Dur can let me bring to the fore parts of my personality that I don't normally express.

Ask yourself, if you've had the chance to really roleplay a character, whether that character ever did something that you yourself wouldn't have done under identical circumstances. Yes? Then you know what I'm talking about. The character isn't you, so you weren't being yourself, but you were playing the character, so you were being yourself. A paradox? Maybe, but what it boils down to is that you got to express an aspect of your personality that you otherwise probably wouldn't recognize.

To clarify a little further: in one sense, all four of the characters have some aspects of my personality, because they are all sprung from my imagination. Of course, none of those personalities is a perfect match to my own. Playing one of those characters, though, lets me emphasize some particular aspect of my personality. And when you play one of those characters (or another character you've generated), you get to emphasize some aspect of your own personality in your own unique way. I have a player in my campaign who prefers playing Scouts. Why? Because there is that in his personality that he can most enjoy expressing by putting on the figurative dress of a Scout character.

Other aspects of a personality are involved, too, of course, and give the same enjoyment as reading a good characterization in a book, or watching a good actor portray a role. Suppose you've decided that your character is excessively lazy. Does this mean that somewhere lurking in your psyche is an idle mass of laziness? Maybe, but I doubt it. Rather, the fun you might get from playing such a lazy character is the comic effect derived from it.

In particular, I'm *not* saying that playing a dishonest character, or a character with some other negative trait, is indicative of some latent mental instability. When I was a kid, my friends and I played cowboys and Indians, and cops and robbers. This is a primitive type of roleplaying, and yes,

sometimes I played "bad guys". The fun I get in these circumstances is that from the excellence of the portrayal, not from some psychological release of anti-social tendencies.

(In fact, as an afterthought, I might mention that in simpler terms, this is the enjoyment of roleplaying: I get to play as a child again. As you read on, you might stop to realize that a youngster wouldn't need any of this advice. When they play, roleplaying comes naturally to them, and it is an important part of any game. "You be the Mommy, and I'll be the Daddy" or "I'm the teacher and you're the class" are simpler than **Traveller**, and play sessions are usually less structured, but identical principles are at work.)

WHERE CAN I DO ALL THIS?

Roleplaying is a realm of the imagination. We may be sitting around a kitchen table, or spread out lazily on a living room rug, but the game takes place in our minds. The referee plays one character, and each of the players plays another, and the interaction that takes place springs from each person's imagination. It wouldn't help the game much to have mockups of space suits and laser rifles and starship bridges and TAS hostels, because the action is going on inside us rather than around us. But again, this takes practice before a person is comfortable in playing this way.

A good way to make roleplaying easier is for players to give their characters a solid background. (In **MegaTraveller**, more rules for this are given as an established system.) Either you as referee or the players can choose a homeworld for their characters, for example. Use *Grand Survey* and *Census* to flesh out details—you can always use these better defined worlds as adventure settings later, so this doesn't really cost any time. Then ask questions. What was the character's family life like—were there brothers and sisters? Are parents or grandparents still alive?

Use facts from the prior service generation system to try to throw a better light on the facets of the character's personality. Did he want to go to college? Was he accepted into the service of choice, or did he have to settle for another career? Did he get to travel much in his younger days, or are those opportunities opening up only now?

The player should think over basic personality traits, and try to decide ahead of time which ones the character has. Is he stubborn or compromising? Quick to anger or easy-going? Ambitious or lazy? Extroverted or introverted? Nervous or confident? Bookish or athletic? Any of these, played with panache, makes a character more interesting.

(We have presented a detailed background like this for each of the four major characters in our historical **Traveller** adventures—in this issue we profile Akidda Laagiir. His three companions were featured in earlier issues.)

You as a referee can help your players grow into better roleplayers if you force them to really roleplay. Your friends shouldn't be saying, "My guy says, ...", they should just say whatever it is, in character. If you start the ball rolling in this respect, your players will pick up the cue. It can be astonishing to try this out, even with someone who has never played a roleplaying game before, but it's beautiful to behold when a player latches onto a character's personality.

When the characters in your session meet someone new, don't explain what the fellow is saying, just say it, in his own words. If he's brusque, be brusque. If he's syrupy, be syrupy. If he's nervous, be nervous.

Don't do this: "There's a guard at the gate, and he wants to know what you're doing here."

Do this: "There's a guard at the gate." (in the proper voice): "'What are you doing here? This area is prohibited to unauthorized personnel.'" (If the guard is supposed to be menacing, roleplay him as menacing—lean across the table at your players, put a frown across your forehead, and shout a little bit.) "Now beat it before I run you all in!"

If you confront your players, acting in character, they will (even without realizing it, at first) answer you in character. This is an amazing technique, and almost unbelievable if you've never seen it. Kibbitzers at some of my play sessions have told me "Frank really knows how to get into playing Dur", only to be dumbfounded when told that Frank was an old friend from high school of some other player, and got invited along even though he had never roleplayed before. Another friend accuses me of "tricking people into roleplaying" by this method. So maybe it is a trick—but it works!

KEEPING IT SIMPLE

But isn't this a lot of work for the referee? The players have it easy—each has only one character to worry about, and in a campaign, they've played their characters often enough to develop a "feel" for how they think and act. But the poor referee must invent hundreds of characters on the fly, and make them seem real to boot. Fortunately, it isn't as hard as it looks if you know a few tricks.

How many people have you met in your life? Thousands, probably—and every one of those can be dropped into a game session. Remember that math teacher you had in high school? The one you imitated behind his back? Well, imitate him again in your next **Traveller** session. When the players meet the starport official, drop into character. It should be simple: you sat in that guy's class for nine months for an hour every day, so you should have some idea of what his personality was like. Did he act tired, or was he energetic? Was he friendly and helpful,or did he seem perturbed by questions? Did he talk slowly and carefully, or did he hurry through his sentences? Did he speak in an educated fashion, or did he talk down to people?

Even better, he may have had a peculiar habit of speech or gesture that you can use. Did he rub the bridge of his nose when thinking? Did he squint or frown while he spoke? Did he twiddle his fingers nervously, or perhaps rattle keys in his pocket? Did he have a funny way of brushing the hair back from his ears, or taking his glasses off and putting them back on while emphasizing a point? Steal his personality for a few minutes—he won't mind, and your players will have the sensation that they're talking to a real person, with a real personality, rather than a cardboard cutout.

This technique won't work, incidentally, if you reveal your sources. It's okay if your characters know you do this, as long as you don't dwell on it, but if at the end of every session you explain that "that guy who fixed your air/raft was old man Smithers", much of the effect is lost. Besides, in a session, you want your players to pay attention to you, and not to play "guess who the clerk is really supposed to be".

Besides teachers, of course, you have hundreds of classmates whom you saw every day for years, ready and waiting. How many television shows have you watched? Every one of them is full of characters you can use in your next session. That novel you just finished—didn't it have some colorful personalities in it? Remember the woman you saw at the grocery store last week, who asked where the cottage cheese was? She won't care a bit if you slip her into your next session as a starship engineer.

SHORT SUBJECTS

Some of these people won't be colorful enough to be full-fledged characters, naturally, but that's not really a problem. You want your players to meet *real people* all through the session, even though some of those encounters will be quite brief. Maybe you only know enough about that woman

in the store to use her for a few minutes—so assign her personality to a minor character. Use the more vivid characters for the more important encounters.

Feel free, too, to combine aspects from more than one personality. Draw the best from a multitude of sources, and your game sessions will liven up. When your players realize that everyone they meet is *real*, then their characters will become more real, too, and that means better roleplaying.

STILL MORE PRACTICE

And remember rule number one—keep practicing. Real roleplaying feels awkward at first to many people, but one gets used to it pretty fast. Don't be afraid to be silly, either. I'm sure you'll feel sillier than you really are, so grin and bear it until you're used to it. Your players might feel silly at first, too, but they'll grow out of it soon enough. One way to shortcut this process is not to let your players realize they are roleplaying—"trick" them into it, as described above.

To really get into the process of roleplaying requires a certain amount of bravado. As the referee, you'll have to take the initiative in this in order to set the tone for your game sessions. Don't be afraid to use funny voices for various characters or aliens. Out in the real (that is, non-gaming) world, this is called "special effects" and it costs big bucks. You can put this quality into your campaign for free if you're willing to sound strange once in a while. Growl a little if you're playing a Vargr!

Gestures and facial expressions serve the same purpose. No one expects you to jump up and down, or act out scenes in graphic detail, but if a character frowns, make sure you frown when playing him. If you roll a good reaction roll for an encounter, wear a smile. With just a little extra effort, you can really make your NPCs come alive this way.

I once saw an excellent example of this, in a gaming session I watched a few years ago. The characters in the adventure were seeking the backing of a wealthy individual, a man who could become an important patron if convinced of the wisdom of the characters' scheme. When the characters were ushered into the bigwig's office, high atop a skyscraper, the patron was swiveled around in his chair, looking out the window at the scenery far below.

Once the referee had given this simple explanation of the scene, he turned around in his chair and proceeded to play the encounter with his back to the players, perfectly simulating the attitude the patron had toward the characters. Only after the players had done their best (and after a few lucky reaction rolls) did the executive turn around, smiling and showing interest in the characters' proposal to him. The players were enthralled by this, as simple as it seems in a written description. You'll have to try these techniques out yourself, to see just how powerful they can be in a game.

OTHER ROLEPLAYING TIPS

One difficulty many newer players have with any roleplaying game is the importance of distinguishing between the player and character. While, as mentioned above, there is no way to totally divorce the personalities of player and character, it is necessary in terms of the game that an effort be made in this regard.

A player, for example, may have read *Grand Survey* and learned all of the rules for the dangers and frequency of volcanic eruptions. But unless the character is a geologist, he won't have the same detailed knowledge, so the player should not act as though he does. Making a character "unlearn" something the player knows can be difficult—particularly when it means a favorite character walks blindly into a dangerous situation that the player "knew" about. But a fresh approach by the characters adds something to the game when played well. Sure, you may know what part of Startown to avoid (because you ran another character through there a month ago), but your latest character doesn't, and he might enjoy visiting.

Another way to force roleplaying is not to be some omnipotent celestial announcer, explaining everything to the players as it happens. If something is really in the realm of a character, let the player running that character explain the situation to the other players, in character of course. (This also allows more opportunities for intrigues between characters, if that's the kind of action your players enjoy.)

For example, near the beginning of a scenario, a character volunteers to check out library data pertinent to the matter at hand, a couple of other characters decide to visit a Scout base and nose around, and the rest want to visit a few hotels looking for some particular individual. Each subparty will have its own little adventures and encounters, and you can encourage roleplaying if you let the players share the information between themselves in their own way.

One way to handle a situation like this is to actually split up the players, running each separate action away from the others. Be careful if you do this. There's nothing worse for a player than to be left alone, sitting bored, while the referee and the other players galavant off into the other room to hold a secret session.

This won't have negative consequences, though, if you handle it right and plan ahead. Don't leave a player by himself, or he's guaranteed to be dissatisfied. But you can leave more than one player alone, for a short while, as long as they have something to do. Make sure your adventure has plenty of red herrings, and mysteries to be solved. You can then take one group off for a minute or two, and the players remaining will be able to brainstorm. "What do you think that guy's really after?" "I don't know, but the way he was acting sure was suspicious." "Yeah, and I don't think we should go with him, at least not on his ship..."

When you get back, you'll find that, far from being bored, the players have made good use of the time to weigh alternatives and make a better, more determined choice over what they wish to do next in the adventure.

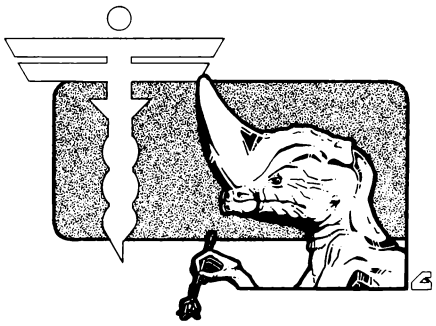
The players who had the encounter away from the others are then able to explain to the others what happened in their own words (or rather, the words of their characters). Allowing the explanation of the situation to be colored by a character's personality adds a lot to the fun of the game. Imagine how differently Dur and Aybee, for example, might explain something to Akidda and Dr. Krenstein. Let your players in on this fun and they'll enjoy the game even more than they already do.

Alternatively, you can run the separate scenarios with all the players present, and then require the players' characters to recap events for their companions. True, the players just watched the whole affair, but the *characters* didn't, and learning to distinguish between the two is another aspect of roleplaying. It can be quite amusing for players to see how their friends explain what just happened.

NO ENDING NECESSARY

Typically, I would finish off an article like this one by rewriting the opening scenario between Mary and her friends, but I think by now you can see the mistakes they were making all too clearly. The session was as dry as Duuga, not because the scenario lacked interest, but because it had no interesting personalities. Breathe life into your sessions by breathing life into the characters you play.

Next issue—we look at a new way to handle verbal interaction (a preview from **MegaTraveller**). See you then.▫



Anagathics, the Drug of the Ages

MEDICAL DIGEST

– Joe D. Fugate Sr.

EDITORS' NOTE:*Beginning with this issue, we are instituting a new column:* "Medical Digest". *This column will examine a specific aspect of* ***Traveller*** *high-tech medicine in detail. This issue, we look at anagathics.*

At tech level 15, anagathics become available, and the threat of old age loses its power forever. But is that really true? Can anagathics really stop aging completely? To understand just what anagathics are, and what they offer, let's take a look at anti-aging research from tech level to tech level.

Starting at tech level 9, serious anti-aging research typically begins. Some selective anti-aging procedures are available (such as youthful skin preservation), but a lack of understanding of the true nature of aging hinders any real breakthroughs until tech level 12. Tech levels 10 and 11 see more effective selective anti-aging procedures developed, but no comprehensive anti-aging process exists.

At tech level 12, researchers come to a true understanding of the aging process, and a crude but all-inclusive anti-aging process is developed. This process involves complicated, uncomfortable treatments that are horrendously expensive. The treatments must be repeated about once a month for the rest of the patient's life.

Worse yet, the treatments are dangerous. Many patients experience side-effects from the treatment, varying from annoying (permanent loss of all body hair) to lethal (death). The only way for an individual to determine if he or she will experience side-effects is to begin the treatment. Because of the way the aging mechanism works, anti-aging treatments prior to age 30 do nothing to halt the aging process.

To begin tech level 12 anti-aging treatments:

FORMIDABLE, medical, 1 day (hazardous, fateful)

REFEREE: The cost for initial treatment is MCr5. Success means the character will suffer no side-effects from the treatment. On a mishap, a side-effect has occured:

Superficial (pick one):

- Permanent loss of all body hair
- Excessive pain during treatment (determination task for future treatments)
- Temporary loss of sight (1Dx10 days)
- Temporary reduction of strength to 1 (1D x 10 days)
- Temporary reduction of dexterity to 1 (1D x 10 days)
- Temporary reduction of endurance to 1 (1D x 10 days)

Minor (pick one):

- Permanent reduction of strength by 1
- Permanent reduction of dexterity by 1
- Permanent reduction of endurance by 1
- Temporary loss of hearing (1D years)
- Temporary loss of sight (1D years)
- Temporary reduction of intelligence to 1 (1Dx10 days)

Major (pick one):

- Permanent reduction of strength by 1D
- Permanent reduction of dexterity by 1D
- Permanent reduction of endurance by 1D
- Permanent loss of hearing
- Permanent loss of sight
- Permanent reduction of intelligence by 1

Destroyed (pick one):

- Permanent reduction of strength to 1
- Permanent reduction of dexterity to 1
- Permanent reduction of endurance to 1
- Permanent reduction of intelligence by 1D
- Coma for 1D years
- Death

To conduct subsequent tech level 12 anti-aging treatments:

FORMIDABLE, medical, 1 hour (safe)

REFEREE: The cost for subsequent treatments is Cr50,000. A new treatment must be undertaken once a month. The treatment must be repeated if it fails.

Given that the tech level 12 treatment is so dangerous as well as expensive, what are its benefits?

On a successful anti-aging treatment, when an aging crisis occurs, the character automatically succeeds at the aging saving throws for two characteristics of his or her choice. In effect, the character selects the one characteristic (strength, dexterity, or endurance) which to risk in an aging saving throw. The age 66 column of the aging table requires four saving throws, so upon reaching the age 66 column, two characteristics of choice are automatically saved, and the other two must be risked in an aging saving throw as normal.

It takes a while for the total effects of anti-aging treatments to be felt. On the first 4-year period of taking anagathics, advance to the next column on the aging table as usual.

However, for each *subsequent* 4-year period in which anti-aging treatments are maintained, the character can *remain* on that column of the aging table instead of advancing one column per term as usual. So, if the character is on the age 34 line, he or she can stay on the age 34 line as long as constant anti-aging treatments are maintained.

If the character ever stops anti-aging treatments, at the end of the next 4-year period, roll saving throws *twice* for each characteristic (but do not yet advance one line on the aging table—it also takes a while for the effects of the treatment to totally go away). Both rolls must succeed or the characteristic is lowered by the indicated amount on the aging table (this means that a character can lose more than

one point of a characteristic at this time). This represents the withdrawal effects of anti-aging treatments.

If the character continues to abstain from treatment in subsequent terms, normal aging resumes (advance one line per term on the aging table as usual). The double saving throw withdrawal effects occur only at the end of the first term in which the character stops the treatments.

If the character later restarts anti-aging treatments, the 4-year period in which he begins new treatments is handled again as a first term on anti-aging treatment: the saving throw benefits are received, but the character must still advance one line on the aging table. Obviously, treatments are most effective if they can be maintained *long-term without interruption.* A continually interrupted treatment can have devastating effects.

Notice a character on treatments will quickly get "out of sync" with the aging table. Thus, even though the character's actual age may be 50, if the character has been able to maintain treatment, the character will roll a saving throw for only one characteristic (instead of all three) on the age 34 line of the aging table that term. Next term, the individual will have an actual age of 54, but will again roll on the age 34 line, and so on.

If a character's age has ever been affected by anagathics, so indicate by writing the age as:

Age 34 (50)

The 34 represents the character's apparent age, and hence the line of the aging table currently being used. The (50) represents the character's actual age in years. If the character has an available supply of anagathics, list anagathics as a possession. If the character is currently in withdrawal from anagathics (just lost the anagathics supply this term), add an exclamation point after the age:

Age 34! (50)

Aging Crisis: If, as a result of aging, a characteristic is reduced to zero, the character suffers an "aging crisis" and becomes quite ill. A basic saving throw of 8+ applies to avoid death.

If the character survives, recovery is made immediately. The characteristic which was reduced to zero automatically becomes 1.

This process occurs each time a characteristic is reduced to zero. If more than one characteristic reaches zero simultaneously, perform a separate aging crisis for each characteristic.

The complexity and annoyance of anti-aging treatments decrease with each tech level. Thus, at tech level 13:

To begin tech level 13 anti-aging treatments:
DIFFICULT, medical, 1 day (hazardous, fateful)
REFEREE: The cost for initial treatment is MCr1. Success means the character will suffer no side-effects from the treatment. On a mishap, a side-effect has occurred; see the tech level 12 task for details.

To conduct subsequent tech level 13 anti-aging treatments:
DIFFICULT, medical, 1 hour (safe)
REFEREE: The cost for subsequent treatments is Cr20,000. A new treatment must be undertaken once a month. The treatment must be repeated if it fails.

And, at tech level 14:

To begin tech level 14 anti-aging treatments:
ROUTINE, medical, 1 hour (hazardous)
REFEREE: The cost for initial treatment is Cr500,000. Success means the character will suffer no side-effects from the treatment. On a mishap, a side-effect shows up in 3D days, see the tech level 12 task for details.

To conduct subsequent tech level 14 anti-aging treatments:
ROUTINE, medical, 1 min (safe)
REFEREE: The cost for subsequent treatments is Cr20,000. A new treatment must be undertaken once a month. The treatment must be repeated if it fails.

Finally, at tech level 15, the dream-come-true occurs. The anti-aging treatments are reduced to a simple dose of drugs in pill form: *anagathics.*

To begin taking anagathics:
ROUTINE, medical, 1 hour (hazardous)
REFEREE: The cost for initial treatment is Cr60,000 (triple dose). Success means the character will suffer no side-effects from taking anagathics. On a mishap, a side-effect shows up in 3D days, see the tech level 12 task for details.

To continue taking anagathics, the individual must take a dose a month, which costs Cr20,000.

Next issue, we take a look at the advancement of medical techniques that occur from tech levels 9 to 12.¤

Statistics From the Second Imperial Grand Survey

The Second Imperial Grand Survey was published in 1065, after 70 years of field research and compilation. The Imperium contained 11,197 member worlds within its borders, or 8,976 individual systems.

The terms "world" and "system" are not synonymous to the Scouts. The Scout Service considers all the bodies within one cubic parsec of space to constitute one "system." On the other hand, a "world" is a major body anywhere within one single system. By this definition, the Imperium has an average "double system" occurrance of 25 percent. In other words, 25 percent of the systems in the Imperium have more than one major world.

WHAT CONSTITUTES A DOUBLE SYSTEM?

Some binary or trinary systems have a distant companion with its own planetary system; the Scouts consider these systems to automatically be double systems. Regina (Spinward Marches 1910) is this kind of double system.

If any other bodies in the star system have a population UPP within 3 levels of the most populous world, then the Scouts count the system as having more than one world. For example, the Terra system (Solomani Rim 1827) has Terra with population UPP of A, and Luna (Terra's only satellite) with a population UPP of 7. Luna's UPP of 7, plus 3 equals Terra's UPP of A (ten), so Luna also counts as a world. So the Terra system is by definition a double system.

Even though 1 out of 4 systems in the Imperium is a double system, the Scouts typically list only one main world UPP for each system.

THE STATISTICS

Here is a detailed list of statistics by sector for the 27 sectors in the Imperium. The sectors are listed in order from spinward to trailing, coreward to rimward (left to right, top to bottom when looking at the map of the Imperium). Each column is explained below:

Number Systems: A count of the number of systems in the sector containing Imperial member worlds.

Total Population: The accumulated total population of all the main worlds in each system.

Population Density: The average population per system. Computed by dividing the total population by the number of systems.

Number of Double Systems: A count of the number of systems with more than one Imperial member world.

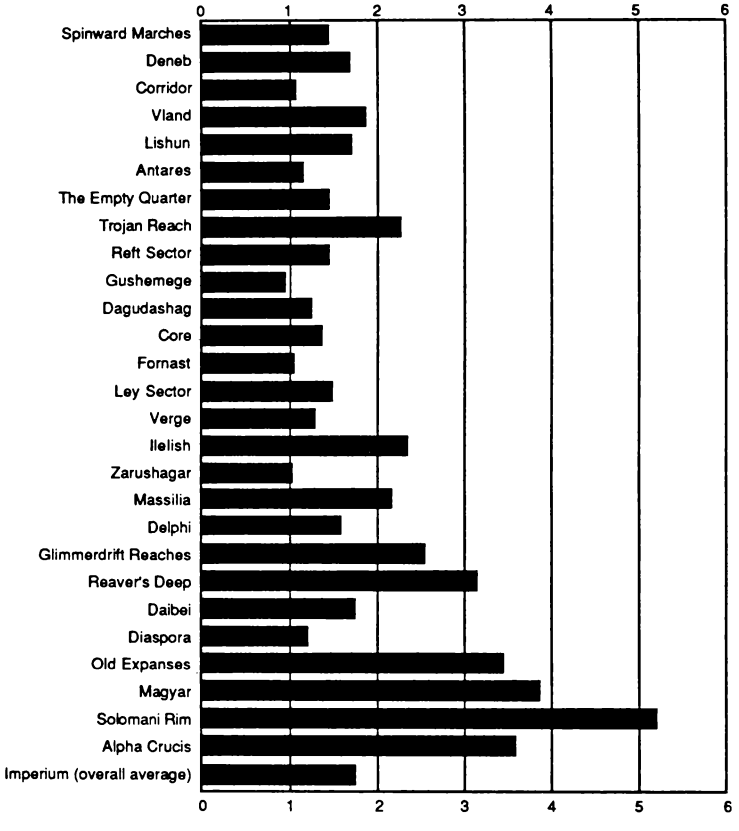
Percentage of Double Systems: The percentage of systems that are double systems. Computed by dividing the number of double systems by the number of systems.

Total Worlds: A count of the total number of Imperial member worlds. Computed by adding the number of systems to the number of double systems.

SCOUT SERVICE STATISTICS FROM THE SECOND IMPERIAL GRAND SURVEY

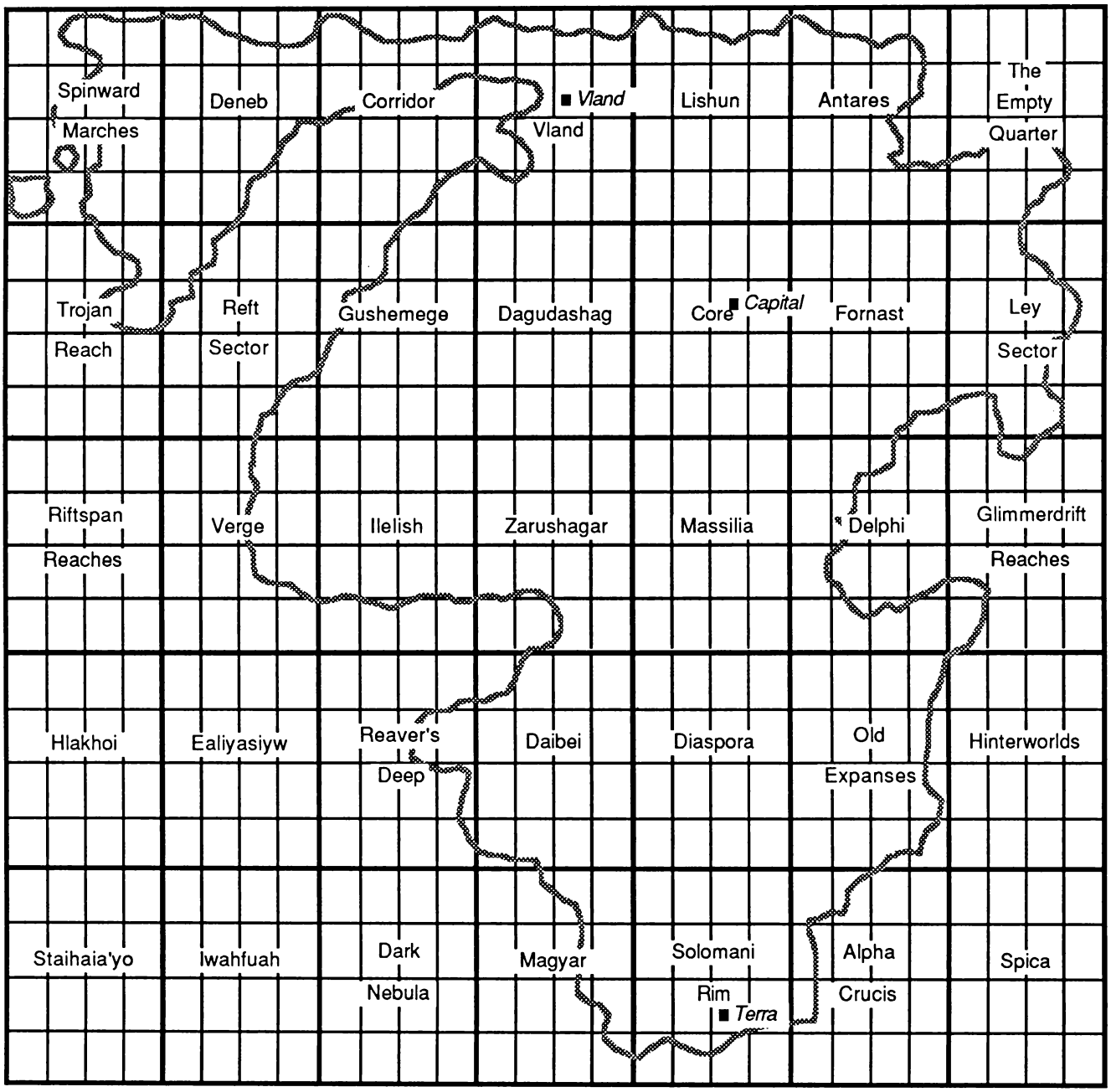
	Sector	Number Systems	Total Population	Pop Density	Double Systems Number	Double Systems Percent	Total Worlds
1	Spinward Marches	272	388,800,000,000	1.43	32	12%	304
2	Deneb	344	585,600,000,000	1.70	81	24%	425
3	Corridor	206	217,500,000,000	1.06	27	13%	233
4	Vland	491	909,300,000,000	1.85	134	27%	625
5	Lishun	551	955,500,000,000	1.73	130	24%	681
6	Antares	465	543,200,000,000	1.17	64	14%	529
7	The Empty Quarter	193	273,700,000,000	1.42	17	9%	210
8	Trojan Reach	56	127,200,000,000	2.27	4	7%	60
9	Reft Sector	85	121,900,000,000	1.43	11	13%	96
10	Gushemege	526	485,300,000,000	0.92	62	12%	588
11	Dagudashag	558	689,500,000,000	1.24	113	20%	671
12	Core	545	724,600,000,000	1.33	121	22%	666
13	Fornast	517	540,200,000,000	1.04	109	21%	626
14	Ley Sector	315	465,200,000,000	1.48	56	18%	371
15	Verge	220	282,500,000,000	1.28	29	13%	249
16	Ilelish	450	1,052,400,000,000	2.34	134	30%	584
17	Zarushagar	480	484,200,000,000	1.01	106	22%	586
18	Massilia	516	1,118,700,000,000	2.17	163	32%	679
19	Delphi	292	463,100,000,000	1.59	59	20%	351
20	Glimmerdrift Reaches	42	106,300,000,000	2.53	11	26%	53
21	Reaver's Deep	57	178,100,000,000	3.13	15	26%	72
22	Daibei	430	749,100,000,000	1.74	104	24%	534
23	Diaspora	446	537,100,000,000	1.20	97	22%	543
24	Old Expanses	400	1,368,400,000,000	3.42	198	50%	598
25	Magyar	131	509,700,000,000	3.88	85	65%	216
26	Solomani Rim	310	1,613,300,000,000	5.20	214	69%	524
27	Alpha Crucis	78	279,500,000,000	3.58	45	58%	123
Imperium Totals...		8,976	15,769,900,000,000	1.76	2221	25%	11,197

AVERAGE POPULATION DENSITY (by Sector)



POPULATION

Also shown is a bar chart of the population density sector by sector. Note that the least dense sectors are Gushemege and Zarushagar, while the most dense sectors are Magyar and the Solomani Rim. The general population density trend is for density to increase as one approaches Solomani-influenced space.¤



Sectors Of The Third Imperium And Surrounds

Pentapod Constructs for 2300

by William Connors

BREATHERS

In their early encounters with mankind, the Pentapods became aware that dealings between air-breathing and water-breathing creatures required special concessions from one side or the other. In an effort to make it easier for potential customers from Earth to tour and examine the Pentapods' various aquatic facilities, the aliens developed a life form which would allow humans to breathe freely under water. These creatures, known simply as Breathers, serve the same purpose as mechanical scuba gear, but are far less bulky and not nearly as expensive.

Breathers look much like large terrestrial spiders. A roughly disc-shaped central body houses the creature's internal organs and is protected from harm by a thin (but very tough), rubbery skin. Running along the back of the animal are two pairs of cilia-lined breathing slits. On opposite sides of the Breather, under each group of slits, are clusters of muscles from which three thin legs project. When fully grown, a Breather can wrap these long "fingers" about three-quarters of the way around an average human head. Like many Pentapod creations, this biological construct has no sense organs or intelligence of any sort.

Breathers are dormant when out of water, entering a state of hibernation during which they curl into a soft-ball-sized sphere. In this state, they require very little care and, if stored in a humid environment, can be kept for several months without use. To prepare the creature for use, one needs only to immerse it in water. After about a minute, the Breather uncurls itself and can be employed promptly. If not used within about two minutes after removal from the water it will return to its state of hibernation. When a person emerges from the water after using a Breather, it loosens its grip and goes dormant after the same period of time.

Breathers are simple to use. When an active Breather is held over the nose and mouth of a human being, it wraps its long legs or fingers around the human's head and holds itself firmly in place. A pair of very slender tubes emerge from the underside of the body and slip down the breathing passages into each lung. A muscle-relaxing chemical is then injected by the Breather to prevent the wearer's normal gag reflex from refusing this entrance. Once in place and submerged, the creature draws in water through its breathing slits and filters it through a series of semi-permeable membranes. These membranes extract gases from the water, which are channeled down the extended tubes and into the wearer's lunds, providing a standard atmosphere.

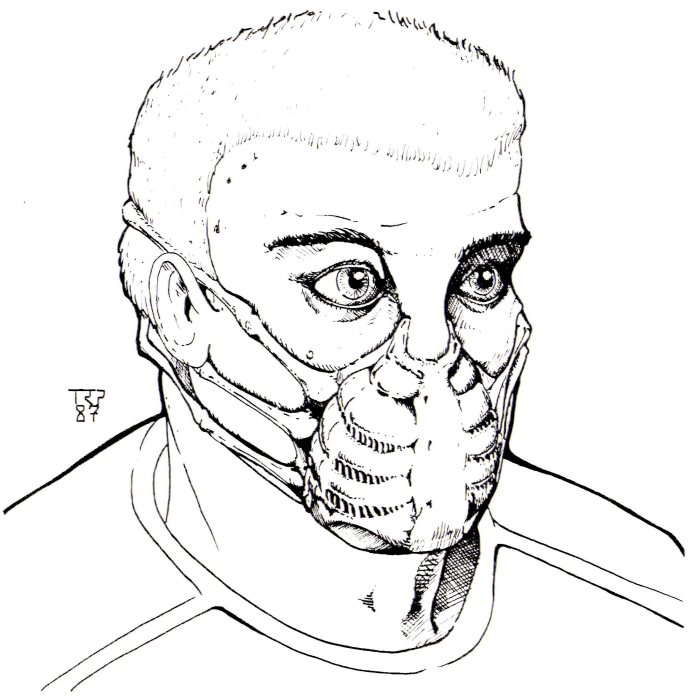
When the carbon-dioxide level in the lungs reaches a certain point, the Breather draws it back up. Before being returned to the water via outlets in the breathing slits, this spent air is filtered again, allowing the animal to feed on the various micro-organisms and organic material which are exhaled from the body.

There are some drawbacks to the use of Breathers, most of which are unimportant in functional terms but which should be considered before pruchase. Many first-time users find the insertion of the lung tubes to be quite uncomfortable. Despite heavy advertising which claims that this only "tickles", some refuse to wear a Breather because of their preconceived perception of being "invaded" by a foreign body. In practice, most people learn to ignore this sensation after several uses.

The most difficult adjustment to using a Breather, however, is the feeling that normal respiration is altered. Although medical examinations prove that the body receives just as much oxygen when using this Pentapod construct as it would from other aquatic life support systems, many people claim that they "can't quite catch their breath" when wearing a Breather. All evidence to date supports the advertisers' claims that this is psychological.

Lastly, it should be noted that it is impossible to speak while wearing a Breather. While not upsetting to experienced divers, who are often forced to communicate with sign language while under water, some mechanical scuba gear can allow underwater speech, and when this capability is desired, Breathers should not be used.

Weight: 2 kg. Price: Lv250.



HIBERNATION INDUCERS

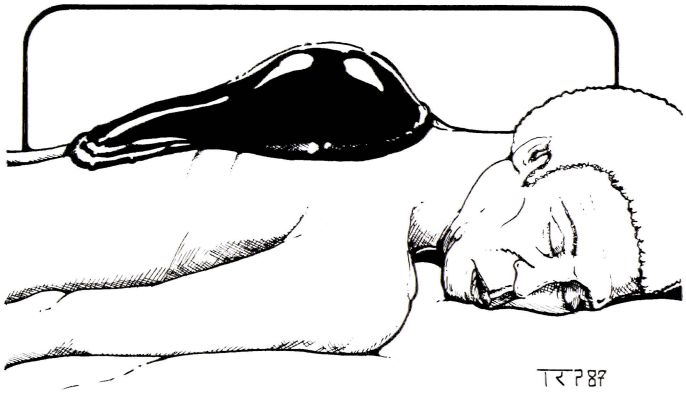
Designed by Pentapod engineers and a team of human physicians, Hibernation Inducers have saved the life of many a badly injured person. Often known simply as "Hibers", these creatures look like globs of glistening black jelly about ten centimeters in diameter. On the underside, they have a soft white hair which feels much like a cat's fur.

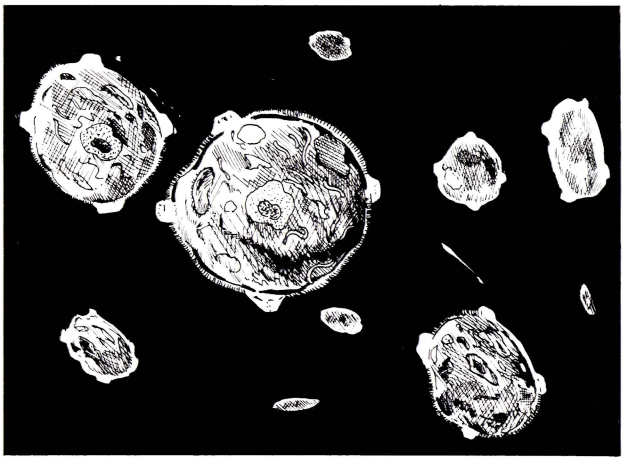
When placed on the back of a human being, a Hiber is able to sense the flow of energy in the spinal column; it then gradually stretches out until it covers the length of the back, from the base of the skull to the tailbone. After about a minute, the Hiber's hairs extend into the skin of the subject, but because of chemicals secreted during this process, the patient feels nothing. After about five minutes, the tendrils of the Hiber reach the bones of the spine and slip into the nerves beneath.

Once this contact is made, the creature begins to take control over much of the body. As this occurs, the injured person sinks into unconsciousness, if not in such a state already. After about ten minutes, during which time the metabolism drops dramatically, the body is stabilized in a state of deep hibernation. At this point, there is almost no measurable brain activity, the heart is all but stopped, and breathing is shallow and infrequent. Time passes very slowly for a person in this condition, roughly one hour of subjective time for every week of real time.

When the hibernating body is delivered to medical facilities for care, the creature is injected with a chemical which causes it to withdraw from the host. The removal process takes about ten minutes, at the end of which the Hiber dies. The patient gradually returns to a normal state and, after about four hours, is fully out of the hibernation state.

Weight: 1.5 Kg. Cost: Lv2,000¤





ATMOSPHERIC FILTER SYMBIOTS

One of the problems which plagued mankind in the quest to establish colonies on other worlds was that many atmospheres were only marginally suitable for human habitation. A planet might be well within optimum ranges for oxygen content and pressure but contain a higher than acceptable level of other (often toxic) chemicals. For example, the atmosphere on the American/Australian colony world of King contains dangerously high levels of sulfur compounds.

In order to facilitate exploitation of worlds like King, the Pentapods, in cooperation with the Life Foundation, designed a microscopic organism known as the Atmospheric Filtration Symbiot, or Filter. These helpful creatures thrive in the human lung, where they feed on the trace elements which would prove harmful to their hosts. In the years since their initial release, Filters have proven to be very effective and have produced no harmful side effects.

Filters must be constructed for each specific environment. For example, those created for the colonists of King would quickly die if removed from the sulfur compounds that they feed upon. Thus, when any citizen leaves the planet and breathes the purified air of a spacecraft, he must receive a new colony of Filters before returning to his native world. Similarly, Filters designed to remove one toxic element from the atmosphere will be wholly unable to fend off other poisons introduced into the lungs. When in a purified atmosphere, the Filters will begin to die after about six hours. Within a day, the entire colony of microbes is destroyed and must be replaced.

Filters expelled from the body (i.e., exhaled or ejected in a cough) die quickly outside of the lungs. On the average, Filters outside of the body can live for no more than five minutes. While it is possible to transfer Filters from one person to another in this manner, the exchanged organisms cause no harm in the new host.

Weight: Not Applicable Cost: Lv450/Filter Colony¤

Briefcase Library for 2300

by Robert Parker

The modern personal library bears little resemblance to its historical predecessors. Those libraries frequently occupied large rooms, in many cases even buildings and complexes of buildings. Today's library is the size of a moderate sized travel case or large briefcase.

On most models, the case swings open to reveal a screen and key board. Below the keyboard are usually 3-4 optical storage drives. The screen attached to the lid of the case is hinged at the top and latched at the bottom, allowing the screen to swing out to allow access to the optical disks stored behind it. Those disks are placed as needed in the non-index drives. One drive contains the index disk for the entire library.

As the library is a computer as well as a storage and retrieval unit, it is possible to do some extremely sophisticated searching for information. Almost any unit will have intrinsic paging, direct accessing, searching, and cross-referencing.

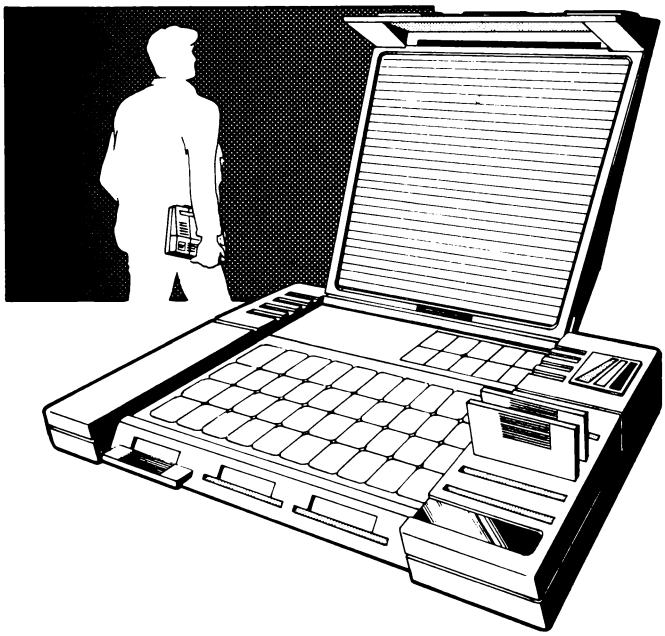
Late in the twentieth century, the beginnings of today's library technology were to be found, though primarily as computer peripherals. The full integration of these technologies had to wait until Earth had recovered from the aftermath of World War III. The full integration of computers and libraries for the private citizens did not take place until late in the twenty-first and early in the twenty-second centuries. Now, of course, such technology is in fairly common use even on the frontier worlds.

This widespread use has been a major factor in the spreading of knowledge and technology throughout explored space. It has also been of great use on the frontier worlds in making colonization of them possible.

In the process of colonization, it is rarely possible to accomplish the spread of knowledge and skills necessary to keep a planet self-supporting in its early days. The low expense and wide use of personal library technology has helped overcome this by providing the necessary knowledge and instructions in using it for given areas. In fact, one of the most popular packages is somewhat facetiously named "The Planet Owner's Operating Manual". In this package are instructions for constructing and using appropriate machinery for dealing with most of the problems met with in the early colonization of a planet, ranging from making soap, to building solar panels and computers, to maintaining a starship.

This is by no means the only package available for personal libraries. In fact, one company even puts out an up-to-the-current-date *Interstellar Journal of Planetography* (formerly *International and Interstellar Planetographic*) with all back issues included, even those of its chief predecessor *National Geographic*, an early, popular planetography magazine back on Earth. These personal libraries are extremely inexpensive for the capabilities that they have. The combined reader-computer averages Lv350 and disks cost around Lv10 each.

Size: 75 cm x 50 cm
Weight: 3 kg
Price: Lv350



Medical Kit for 2300

by Nancy Parker

All commercial vehicles with seating capacity of 30 or over, as well as military medics and civil paramedics, carry a medical kit. In addition to common bandaging materials and topical antiseptics, specialized items for treatment of more serious injuries are included. A typical example of a modern medical kit follows.

Fibrinogen Dressings: Pads of fibrinogen fibers impregnated with antibiotics can be placed directly on freely bleeding wounds, followed by a pressure dressing. Clots form around the fibers in 1/5 of the normal clotting time. This layer of bandage is not removed or changed later; it will fall off as the wound heals. The speed with which these dressings halt bleeding has been credited with saving many lives even in the hands of those unskilled in first aid.

Spray Hypos: This method of delivering medicines has several advantages over needles. Contamination of the hypo is impossible, even if used repeatedly without cleaning. A poorly placed shot can not accidentally enter an artery or hit a nerve.

The technique of using sprays is easily learned even by needle-shy personnel. Sprays can be set for administration through any thickness of clothing or even vacc suits. For these reasons the needle has all but vanished from medical practice. A kit usually contains 10 or 20 ampules of broad-spectrum antibiotics/antivirals, 20 local anesthetics, 6 stimulants labelled for specific uses, and 10 sedatives. Ampules of chemical painkillers may be included, as well as the pain discs listed below.

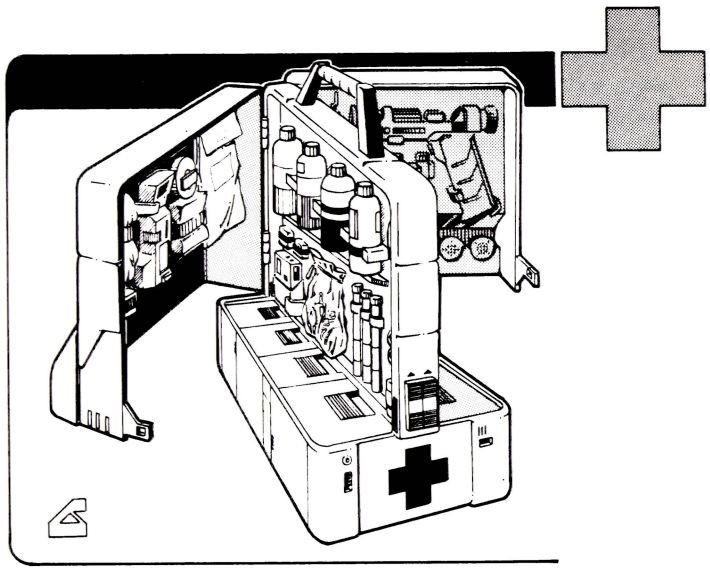
Pain Discs: Taped on the base of the skull, these electronic transmitters stimulate the production of endorphins, relieving pain without the loss of other senses caused by morphine substitutes. Individual capacity for endorphin production varies, but as a rule the discs can be used exclusively for a week before a rest of two days is needed to recharge the brain chemical. Chronic low-grade pain can be handled by this method for months without pause. The discs are not suitable for anesthesia for surgery.

Experimental versions of these discs have been made using a "white noise" principle to block the pain signal from the spinal nerves. This is more effective than the endorphin method but produces a peculiar buzzing sensation in some patients and can dangerously dull the touch sense.

One variety of transmitter disc is designed to put the patient in a deep trance or coma, oblivious to all sensory input. This can be used as surgical anesthesia or to ward off shock and promote healing. Members of certain elite branches of the military and intelligence branches are conditioned by hypnosis to be able to induce such trances in themselves by code words and to come out of them only when signalled by a voice they know. Enhanced rates of healing can be induced in the same way. This trick is very useful in combat and even more so to prisoners of war. A medkit will contain at least one coma-inducing disc.

Wound Glue: Collagen and a special tissue adhesive are spun in long strings and packaged for sterility. These strings are placed inside the edges of a wound, which are then pressed together. Simpler and less painful than stitches, wound glue when properly used can help even a complicated laceration heal with little scarring.

As with stitches, rough handling may tear healing tissue, so a firm protective bandage is preferred. Use of the affected body part should be avoided for 3-5 days and it should be favored until movement is not painful. If muscle layers are cut, several layers may have to be glued separately.



Probe: For removing bullets or other foreign bodies from deep wounds, this flexible probe has a fiber optic light and lens, and a grasping end which can be controlled by the operator. Naturally, local anesthetic is recommended before probing.

Nuskin Burn Dressings: Serious burns should not be covered with fibrinogen dressings, yet such injuries can cause severe fluid loss and are open to infection. The nu-skin package contains a chemical debrider to remove charred skin, and large pieces of a waterproof, germ-proof covering for the denuded areas. These are then covered with ordinary sterile dressings. Hospital attendants will finish debriding dead tissue later.

The kit includes a second type of nuskin for completely cleaned burns. It adheres to provide a structure for new tissue growth while protecting the patient in lieu of his own skin. Rather than area grafts, the nuskin matrix is seeded with healthy skin cells collected and placed with a large needle. It helps prevent drawn scars, but therapy still includes frequent exercise of affected joints.

Survival Blankets: These are tough, waterproof fabric lined with reflective foil to hold in body heat, large enough to wrap an adult patient. Packages of heat-producing chemicals can be placed inside the blanket to help prevent shock or aid recovery from exposure. Ten each are in the kit.

IV Fluids: Five units (1/2 liter) of fluid are provided, containing glucose and electrolytes. Placing an IV correctly is a ROUTINE task for anyone with medical skill but is one level more difficult, as well as hazardous by anyone without medical skill.

If the regular medic of a group is incapacitated, an unskilled player may use the supplies to attempt first aid by following instructions, but first aid tasks are uncertain—and hazardous for head or internal injuries. Reroll the task each hour that a patient is under the unskilled character's care until proper medical help is obtained or the real medic recovers sufficiently to supervise.

The complete kit weighs 15 kg and occupies 30 liters of space. Original cost is 100 livres, and perishable supplies must be replaced (if not used) every six months, at a cost of 20 livre.¤

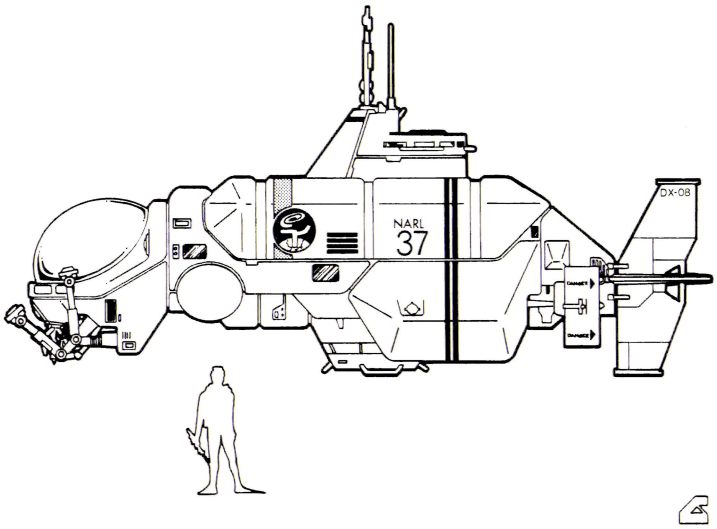
The Life Foundation "Squid" for 2300

by Robert Parker

Necessary resources are not always available on land, extremely shallow water, or in open space. This necessitates the use of submersibles for exploration and exploitation beneath the seas of charted worlds.

Beginning in 2260, the Life Foundation began the extensive use of the Squid line of submersibles for use in the DM -3 1123 system on Austin's World. This effort got off to a slow start, but began to expand once the bugs had been worked out of the concept. Now these small subs are widely used on several colonized worlds in the American Arm.

There is quite a range of different vehicles available, but one of the most popular models is the 34-TK-ZD Squid manufactured by the Bronnen Corporation in New Cambridge on Austin's World. Its size, maneuverablity, and flexiblity of use make it one of the best all-round submersible vehicles in use today. It has a wide range of exchangeable manipulators, complete with the best telepresence software available. It can withstand up to 1500 atmospheres (Earth standard) of pressure. Its controls are simple to learn and use, and modular design of critical components makes it an easy machine to assemble and maintain (a crucial factor on frontier worlds).



On some models there is an airlock that can be used for ferrying divers, dryfoot personnel, and cargo between surface and underwater stations or between two stations.

The usual Squid contains three or four workstations and is manned by four to six people. Its instruments include both visible light and infrared floodlights and spotlights, standard sonar, sidescanning sonar, thermometers, pressure gauges, and current speed meters. Some models will have an extended scientific package, but this is the standard package.

The "Squid's" usual work assignment ranges from exploration and mining through fishing to underwater taxi and UW barge towing. Most models of the Squid are hydrogen powered, although a few use small nuclear engines reminiscent of the powerplants used by warsubs back in the late twentieth century on Earth.

Displacement: 18 tons
Price: Lv45,000

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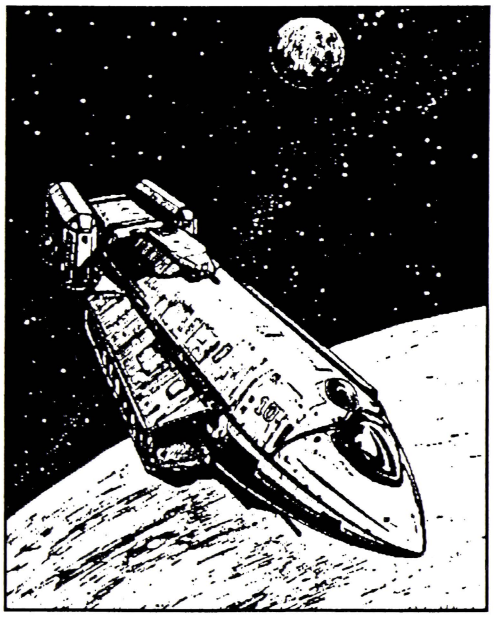

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